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HONEY MARKETS

U. S. GOVERNMENT REPORT

Information from Producing Areas (first half of June)

CALIFORNIA: Southern California—Much cool, cloudy, foggy weather has lessened bee activities, but has also extended the sage flow. On the coast slope of San Diego County bees have been carrying in small quantities of nectar from white, black and purple sages, wild buckwheat, horehound, crowfoot, sumac, and other flowers. The bloom is holding out well, but the flow is said to be meager. Black sage is reported nearly over, but white sage is in full bloom. On the desert slope bees are said to be doing better than in any year since 1922, and with the second extracting just finished many colonies have averaged 100 lbs. to date. The honey market is unsettled, and buyers are generally offering low prices. Carlot sale white orange reported at 9c per lb.; ton lots, 7½-10c per lb., according to body and quality; ton lots water white orange, 10c; one car white to light amber sage, 9c; one car water-white sage, 8½c per lb.; ton lots white sage, 7½c per lb.; water white, 8c per lb.; ton lots 1925 light amber orange honey sold at 8c per lb. Beeswax has sold in small lots at 36-38c per lb. Central California: Due to adverse weather conditions, surplus crop reported very light. Practically no white sage yield is looked for. Few 60s white extracted sold at 12½c per lb. Northern California: Bees are working actively on toyon, with good colonies gaining about 4 lbs. a day. Hot weather may reduce size of crop. Sales of 60s light amber mustard reported at 7½c per lb.; amber fruit bloom, 6½c per lb. Beeswax has sold at 32c per lb.

PACIFIC NORTHWEST—Little honey secured from first cutting alfalfa in Washington as cool weather prevented bloom from coming on. Alfalfa and sweet clover are not proving as early as anticipated previously by nearly a week, but present hot weather may hasten flow. Honey crop in Willamette Valley reported larger than average. Ton lot sale white sweet clover and alfalfa reported at 10c per lb.

INTERMOUNTAIN REGION — Numerous cars of extracted honey of the 1925 crop will be carried over, and in some sections some comb honey. Demand light and offers generally low. Cars of white or water white sweet clover and alfalfa reported sold at 7c, 7½c, and 8½c per lb., with offers generally around 7c; 60s, 9c; small pails, 10c per lb. Beeswax sales reported at 34-38c per lb.

PLAINS AREA—Over most of this territory it has been very dry, and the drouth and high winds have been very damaging to white clover, which has already burned out in some sections. Sweet clover prospects are better, but rain must fall soon even for that. Little honey reported sold. Few sales white clover extratced in small pails at 14½-15c per lb.

TEXAS—Demand for bulk comb honey good, but extracted is moving only moderately. Extracted light amber has sold, alfalfa, 60s, 6½-9c per lb.; other flavors, ton lots, 10c; 60s, 12c; small pails, 11-14c per lb.; white, ton lots, 60s, 15c; small pails, 16c per lb. Light amber bulk comb has moved at 16-17c per lb. for 5-lb. pails; 15c per lb. for 10-lb. pails. Beeswax, 35c per lb.

NEW MEXICO—Few sales reported. Small lots off-grade extracted reported sold at 10¼c per lb.

EAST CENTRAL AND NORTH CENTRAL STATES — Colonies that were sufficiently strong to take advantage of the flow did well on dandelion and fruit bloom, including wild cherries; and strong colonies stored 20 to 40 lbs. of honey from these sources. Raspberries are two weeks late. Clover is spotted, occasionally early but generally late. White and alsike clover are just coming into bloom, but flow is expected to be light due to lack of moisture. Considerable extracted still remains unsold. Demand slow, with few sales reported. White clover, 60s to ton lots, 9¼-12c; small pails, 15c per lb.; buckwheat, ton lots, 8½c per lb. Sales of white clover comb reported at $4.25 per case for fancy, $3.20-3.75 per case for No. 1, and $3.25 for No. 2.

NORTHEASTERN STATES—Season very late and cold. Nectar from fruit and dandelion bloom of great help in brood-rearing, however, where weather was not too cool for bees to work on them, and some surplus nectar was extracted from strong colonies. Fully 30 per cent of the buckwheat crop will probably be carried over, although a few recent large sales have cut down stocks on hand. Little clover honey remains unsold. Recent sales white clover extracted have been reported at 10-12c per lb.; light amber clover, 60s to ton, 9-11c; buckwheat, kegs, 5-8c; 60s, 7-8½c per lb.; small pails, 8-12c per lb. Fancy and No. 1 white clover comb have moved at $4.00-5.00 per case; few best, $6.00; fancy and No. 1 buckwheat comb, $2.75-3.60 per case; No. 2, $2.50-2.75 per case. Yellow beeswax has sold at 41c per lb.

SOUTHEASTERN STATES—Some honey continues to come in in Louisiana, from clover and other plants, but the size of the spring flow is said to be somewhat disappointing, as the wet, cold spring seriously handicapped bee activities. The quality, however, is said to be good. Shipment of package bees is reported about over. Little swarming during past two weeks. The Mississippi outlook is said to be for the best crop in years, and some colonies that were drawn on three times for package bees are reported to have nearly a super of new honey. Conditions in Alabama are spotted. In Georgia the spring honey flow was cut off rather abruptly, but a normal crop was secured in southeast Georgia, and about two-thirds of a crop further north in the state. Conditions in North Carolina appear spotted, reports indicating that in some sections the flow has been one of the best on record, both as to size of crop and quality, while other areas are having a short crop. The crop in south Florida has been short. Best extracted has sold in 60s at 12c per lb.; pails, 11c; barrels, white tupelo, 12c per lb.; amber, 8-8½c per lb. Bulk comb or chunk honey has moved at 15-16c per lb. Section comb honey has sold at $4.00-5.00 per case.

From Producers' Associations.

At this writing colonies are in good condition. Some are storing surplus, and the prospects are good. Honey plants are also in good condition and there seems to be sufficient water for irrigation purposes. We are figuring on a larger crop than last year, aside from the increased membership.

The Western Colorado Honey Exchange,
Jas. Watson, Jr., Mgr.
Grand Valley, Colo., June 15.

Winter losses have been much heavier than usual in Ontario, and we are not looking for more than an average crop. The domestic markets are fairly active, but our export markets are very quiet.

Ontario Honey Producers Co-operative, Ltd.,
A. G. Halstead, Gen. Mgr.
Toronto, Canada, June 2.

Special Foreign Quotations

Honey—The market has continued quite steady on the basis of our last quotations. This makes the price for good extracted honey 12½-13c per lb. in American currency. There has been a steady inquiry for beeswax and sales have been made at about the equivalent monetary value of 47-48c per lb. for good wax.

Liverpool, Eng., June 3. Taylor & Co.

Honey Producers' Report

Early in June we sent the following questions to actual honey producers:

1. How does the honey flow thus far (if any) compare with normal in your locality? Give answer in per cent.
2. What is your estimate at this time of the 1926 honey crop in your region as compared with the average during the past five years. Give answer in per cent.
3. At what price has honey been sold, if any, in large lots (specify if this was in carload or less than carload lots) in your locality during the past month? (a) Extracted honey, per lb.? (b) Comb honey, fancy and No. 1, per case?
4. What are prices when sold to grocers in case lots? (a) Extracted honey in 5-lb. pails, or other retail packages in terms of 5-lb. pails? (b) Comb honey, fancy and No. 1, per case?
5. What is the retail price to consumers in your locality? (a) Extracted honey in 5-lb. pails or other retail packages in terms of 5-lb. pails? (b) Comb honey, fancy and No. 1, per section?
6. How is honey now moving on the market in your locality? Give answer in one word, as rapid, fair, or slow.
7. Is there any of last year's honey left in the hands of producers in your locality? If so, what per cent of the crop is carried over?

The following are the answers received to the above questions:

State.	Reported by:	Per cent Honey Flow.	5-yr. Aver.	Large lots. Ext.	Large lots. Comb.	Wholesale. Ext.	Wholesale. Comb.	Retail. Ext.	Retail. Comb.	Move-ment.	Pct. 1925 Crop Unsold.
Ala.	W. D. Achord	110	100							Fair	
Ala.	J. M. Cutts	125	125					$0.80		Fair	0
Ala.	J. C. Dickman	95	90			$.80	$4.80	1.10	$.28	Fair	
Ark.	Jas. Johnson	50	75								0
Ark.	J. V. Ormond	100	100							Slow	0
Cal.	M. C. Richter	10	10	.12½				1.50		Slow	20
Cal.	L. L. Andrews	75	120	.10		.85		1.00	.28	Slow	
Cal.	M. A. Saylor	90	90	.08	$4.00	.60	4.25	.75	.25	Fair	5
Col.	B. W. Hopper	100	100								0
Conn.	Allen Latham					1.00	6.25	1.25	.37	Fair	2
Conn.	A. W. Yates	175	150			.80		1.00		Fair	0
Fla.	C. C. Cook	70	70	.07½		.85		1.10		Fair	0
Ga.	J. J. Wilder	100	105	.12½	4.75	.85	5.25	1.00	.23	Fair	
Ill.	C. F. Bender	0							.30	Fair	0
Ill.	A. L. Kildow	0	0					.85	.25	Slow	0
Ind.	Jay Smith	125	125					1.25	.35	Fair	0
Ind.	T. C. Johnson					.90	4.90	1.15	.25	Slow	0
Ind.	E. S. Miller					1.00	4.80	1.25	.25	Fair	
Iowa.	E. G. Brown	75	75			.75		1.00		Fair	0
Iowa.	Frank Coverdale	100	100			.65	3.75	.75	.21	Slow	5
Kans.	Frank Hill	20	55							Slow	0
La.	E. C. Davis	100	100	.09		.75		1.00		Fair	0
Me.	O. B. Griffin	0	25			1.12	6.50	1.50	.35	Slow	0
Md.	S. G. Crocker, Jr.	100	125			1.00	5.50	1.50	.30	Slow	10
Mass.	B. N. Gates									Slow	
Mich.	L. S. Griggs	10	10	.09		.70	5.00	.90	.30	Slow	10
Mich.	Floyd Markham	150				.80		1.00	.25	Fair	0
Mich.	Ira D. Bartlett	0	100			.75		1.00		Slow	
Mich.	E. D. Townsend	100	80							Slow	10
Minn.	Francis Jager	25	20			.83	3.37	1.10	.25	Slow	15
Mo.	J. H. Fisbeck	100	80							Slow	0
Mo.	J. M. Romberger	5						1.10	.27	Slow	0
Neb.	J. H. Wagner			.11		.65		1.00		Slow	10
Nev.	E. G. Norton			.07						Slow	30
N.Y.	N. L. Stevens	100	80	.06½				.80		Slow	10
N.Y.	Geo. B. Howe		25			.75				Fair	
N.Y.	Adams & Myers	0	50			.75		1.00	.25	Slow	50
N.Y.	F. W. Lesser			.10½				1.00	.28	Slow	2
N.C.	W. J. Martin	90	80			1.00	4.50	1.25	.35	Fair	0
Ohio.	R. D. Hiatt	90	50			1.05	6.00	1.35	.35	Slow	10
Ohio.	J. F. Moore	50				.85		1.10	.30	Slow	10
Ohio.	Fred Leininger		75	.11		1.00	4.50	1.00			0
Okla.	Jos. Heueisen	80	75			1.25		1.50	.35	Fair	0
Okla.	C. F. Stiles	60	50			.87		1.15	.33	Slow	0
Ore.	H. A. Scullen	100	100			.85		.95	.25	Fair	25
Pa.	D. C. Gilham	100	90			1.05	6.70	1.40	.38	Fair	40
Pa.	Harry Beaver	10	20							Slow	10
S.C.	E. S. Prevost	100	100			.90	4.80	1.12	.30	Rapid	
S.D.	L. A. Syverud	50	50							Slow	
Tenn.	J. M. Buchanan	50	35							Slow	0
Texas.	H. B. Parks	10								Slow	0
Texas.	T. A. Bowden	125	125			.80		1.05		Fair	0
Texas.	J. N. Mayes	10	15							Rapid	0
Utah.	M. A. Gill	80	75						.25	Slow	25
Vt.	J. E. Crane	100	100			1.00	6.00	1.25	.35	Slow	0
Va.	T. C. Asher	110	100			1.00	6.00	1.25	.30	Fair	0
Va.	L. N. Gravely	97	100	.15		.75	5.50	1.00	.35	Fair	0
Wash.	W. L. Cox	100	100							Fair	0
Wash.	G. W. B. Saxton	110	100	.09¼		.65		.75		Slow	25
W.Va.	T. K. Massie	80	90					.90	.25	Slow	0
Wis.	N. E. France							1.00	.26	Slow	20
Wis	E. Hassinger					.80		1.00		Slow	5
Wis.	H. F. Wilson	100		.10				1.10	.33	Fair	

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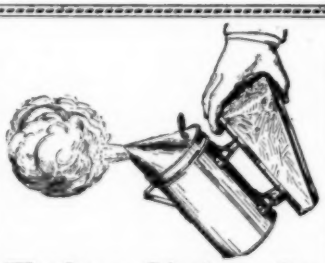

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B. A. Tedford
McCreary, Manitoba

EDITORIAL

JULY, 1926

OUR CORNERSTONE

REMEMBER at all times that improved bee culture is our end and aim, and we trust no one will hesitate to give any facts from experience because they may tend to overthrow any particular person or "hobby." If any of our special plans don't work, or if anything we advertise has had its value over estimated, here in these pages is the place of all others to set the error right.—From A. I. Root's "introductory" in the first issue of Gleanings in Bee Culture, January 1, 1873.

TWO meetings of beekeepers that are of outstanding importance are scheduled for this summer, both of which have been announced in previous issues. One of these is the meeting at Platteville, Wisconsin, to be held on August 17 to 20. This meeting is sponsored by the Wisconsin Beekeepers' Association, it being one of the series of beekeepers' chautauquas which have created so much interest and have attracted such large numbers of beekeepers during past years. This season the chautauqua is to be greatly increased in its scope, being a joint meeting of beekeepers from Illinois, Iowa, Minnesota, and Wisconsin. It is featured as a meeting in honor of the Dadant family, especially Mr. C. P. Dadant, editor of the American Bee Journal, and a recognized world authority on beekeeping subjects. A complete program of this meeting is published in this issue on page 464.

Two Outstanding Beekeepers' Meetings

The other meeting is the annual field meeting of the Ohio State Beekeepers' Association, which this year is broadened in scope by inviting beekeepers from all parts of the United States and Canada as well as other foreign countries. This is a memorial meeting in honor of the memory of two outstanding figures in the beekeeping world, Rev. L. L. Langstroth, inventor of the movable-frame hive, which is the foundation of all modern beekeeping; and of A. I. Root, a disciple of Langstroth, who spent the greater portion of his life in furthering the advancement of the industry. This meeting was planned for several years ago, but was postponed until this year. Thus in the Wisconsin meeting honor will be paid to a great beekeeper who is still living, while in the Ohio meeting honor will be paid to two great men who have passed on.

The Root-Langstroth Memorial Meeting will be held at Medina, Ohio, on September 21, 22, and 23, after which those who can do so will proceed to Oxford, Ohio, the burial place of Langstroth, where another program will be carried out.

For each of these meetings arrangements are being made to take care of a large number, camping facilities and eating places being arranged.

OWING to the lateness of the season it is impossible to tell much about the honey crop prospects at this time. In some of the southern states the yield has been exceptionally good, but in other portions of the South the crop has been somewhat short. In portions of Texas the early honey crop has been very short, but later reports indicate that a fair crop from mesquite may still be secured in that state. In portions of California, especially southern California, a good crop is being harvested, but reports from northern California are discouraging. Prospects throughout the sweet clover and alfalfa region are good except in a few cases where there is a water shortage. In the clover region conditions are somewhat spotted. In many places white clover and alsike clover are scarce, while in other places these plants are sufficiently abundant to give a good crop of honey if weather conditions should be favorable in early July. Basswood is heavily budded and in some cases may be an important factor in the honey crop. Taken as a whole, conditions are not favorable for a good honey crop in the clover region except in those localities having a sufficient amount of sweet clover.

The Honey Crop Prospects

Throughout the western part of the United States bees are reported to have wintered well, and seem to be in better condition than in the East, on account of the milder winter in the West. In the northeastern section there was a heavy loss of colonies, and many were so weakened that they can not gather a crop of honey this season. However, in much of the eastern part of the country the bees secured an unusual amount of early honey, and colonies properly cared for last fall and winter have built up to greater strength than usual.

Apparently more honey is being carried over in some of the western states than for some time, but if there should be a shortage in the clover region, which now seems probable, this old honey may be fairly well cleaned up before much of the new crop is offered.

IN order to avoid making an extra visit to the apiaries to clip the queens, the Editor, in operating his apiaries at a distance, waits until the beginning of the honey flow from clover to do this. Since there is brood in both stories and the colonies are quite strong at that time, it would seem that finding the queen would be quite a task; but, after practicing this method for fifteen years, several short cuts in finding the queens in populous two-story hives have been worked out. Perhaps the most important of these is that of determining in advance, in most cases, in which hive-body the queen is working at the time.

Finding Queen in Two-Story Hives

While the rule is not infallible, queens apparently work in the upper story during the early part of the day and in the lower story in the afternoon. If the field bees go to the field early in the forenoon, the queens go down to the lower story earlier than when the field workers stay in the hive until later. Apparently when the field workers crowd into the lower portion of the hive as they often do when driven in from the fields by a shower, before going to the fields in the morning, and after their return in the evening, the queens move upward out of the crowd; and when the congestion in the lower hive-body is relieved by the field bees going to the fields, the queen goes down into the lower story.

By carefully separating the two hive-bodies and setting the upper one off without greatly disturbing the colony, the queen can usually be found by examining only the combs in one of the hive-bodies, by choosing the upper one when bees are not working well in the fields, and the lower one later in the day or when most of the field bees are out. At least, this has been the rule in the Editor's experience in finding queens for a number of years. The exceptions are usually young queens. This may be on account of the greater tendency on the part of young queens to run to another part of the hive when the colony is disturbed. In such cases great care is necessary in separating the hive-bodies, in order to do this with the least possible disturbance.

IT is interesting to note how freely the queens pass back and forth between two sets of combs in a two-story hive when the colony is strong. This is in striking contrast with the manner in which they confine their work to a single story (usually the upper story in early spring) when the colony is weak or of medium strength. In colonies wintered in two stories, which come through the winter in a weakened condition, the queens usually confine their work to the upper story until the colony becomes so strong that her work is expanded into the lower story; but in strong well-wintered colonies there is apparently no hesitation on the part of the queen in passing from one set of combs to the other.

When Queens Work in Two Stories

It is commonly believed that the queen does not readily find her way across the bottom-bars of the frames in the upper story, the top-bars of the lower set of frames and the space between; but in the case of strong colonies these do not appear to be a barrier to the queen. This suggests that it may be the workers that determine where the queen shall lay instead of the queen herself, and that, instead of having to find the cells which the workers have prepared for eggs, the queens may be guided to them by the workers through some means of communication.

It is well known that the queen will readily find her way to cells that have been prepared for eggs even in a remote part of the hive, even though there is a barrier of honey between. When an empty comb is inserted in the middle of the brood-chamber, the queen pays no attention to it until the workers have prepared the cells for eggs. Instead, she will go across this comb to the opposite side of the hive, if necessary, to find a place to lay. It is also well known that a queen will pass through a super of honey, or possibly two or three of them, to lay in drone-cells which the bees have prepared in a super remote from the brood-chamber. Whether the queen finds her own way to the prepared cells, or whether the workers have some method of calling her to them, is a problem that might well receive the attention of those engaged in research work in beekeeping in Washington and in our agricultural colleges.

THE "corn sugar" bill, as amended by the House Committee on Interstate and Foreign Commerce was passed by the House of Representatives on June 17, there being 175 votes for the bill and 131 against it, thus completing another step in a most disgraceful piece of destructive legislation. The next step will be that of sending it to conference with the Senate, that body having passed a bill identical with the original Cole bill late in January. The Senate bill is broader in its

"Corn Sugar" Bill Passed by House

scope, legalizing the use of corn sugar in any other food as a sweetener or preserver without so declaring on the label, while the bill just passed by the House would legalize misbranding only in certain important groups of food, namely, "confectionery, frozen products, products of the bakery, meats, or meat products." The differences in the two bills will, therefore, have to be harmonized in conference before being submitted to the President for his signature.

According to authorities in the Bureau of Chemistry in charge of the enforcement of the Pure Food Law, the Senate bill would legalize the adulteration of honey with "corn sugar," so that a mixture of corn sugar and honey could be labeled "honey" and the authorities at Washington would be powerless to stop such deceptive practice. The House bill does not legalize the adulteration of honey, but confines deception to the above mentioned groups.

The avalanche of letters from beekeepers protesting against the original "corn sugar" bill resulted, as mentioned last month, in the abandonment of the original Cole bill, and made it necessary for the "corn sugar" people to select the groups of foods mentioned above for adulteration. While this was a partial victory for beekeepers, the Editor believes that if this bill as amended is agreed upon in conference with the Senate and is signed by the President, it will be a severe blow to the beekeeping industry since it can not help but destroy confidence in the truthfulness of labels and the working of the Pure Food Law. It will be extremely difficult for beekeepers to explain to the public that this new measure legalizes the adulteration and misbranding of only certain groups of foods and does not apply to honey. Beekeepers who have had much experience in marketing honey know how difficult it is to convince many people that the honey offered on the market by this country is pure even under the Pure Food Law as it is at present. This will be increasingly difficult when this destructive legislation becomes a law. Furthermore, having gained permission to adulterate and misbrand a limited group of food products it can not be expected that the "corn sugar" people will cease their efforts toward tearing down the entire structure of the Pure Food Law. The group of food products mentioned in the bill covers a large portion of the diet of the American people, so that it will not be necessary to go much further to nullify completely the workings of one of the most beneficent laws of the land.

Some have criticized this journal for making so much "fuss" about the "corn sugar" bill on the ground that there was no danger of the lawmakers of a great and intelligent nation passing a bill intended to tear down the Pure Food Law. Perhaps this feeling on the part of many prevented their writing again to their senators and representatives in response to our appeal last month. If only 23 more congressmen could have been induced to vote against the bill it would have been defeated in the House. This shows the effects of the protests sent in by beekeepers and others. The bill passed the Senate in January without opposition and without a record vote.

The fact that Congressman Cole succeeded in obtaining a special rule by which the "corn sugar" bill was taken out of its regular order on the House Calendar and brought up in the House before Congress adjourned is an indication of the power of the influences promoting the bill. This came as a surprise to many experienced lawmakers who thought this would be impossible.

Just what the effects of this law will be on the already difficult problem of marketing honey is difficult to tell. It is certain that our marketing problem will become more difficult, and it will be necessary to put more effort and money into advertising than would have been necessary otherwise. It may even become necessary to market more of the nation's crop of honey in the comb, since the public has greater confidence in the purity of comb honey than in the purity of extracted honey. It will be remembered that the rapid change from comb honey production to extracted honey production since the passage of the Pure Food Law in 1906 is largely a result of the greater confidence in the purity of extracted honey brought about by the Pure Food Law. Since this confidence will be destroyed to a large extent if the "corn sugar" bill becomes a law, beekeepers may be compelled to turn again to comb honey.

There is still a ray of hope that an agreement may not be reached when the bill goes to the Senate for conference, or that it will be vetoed by the President when submitted to him. However, since the "corn sugar" people have shrewdly featured this bill as a farm-relief measure, great pressure will be brought to bear upon the President in an effort to compel him to sign it. Since there is but little hope that this vicious piece of legislation will not become a law, beekeepers may as well prepare for the worst and immediately plan the most aggressive honey advertising campaign the country has ever had in an effort to overcome the evil effects of this disgraceful legislation.

XUM

INTRODUCTION OF QUEENS

By Jay Smith

Review of Various Methods Which Have Been Advocated and Used in Introducing

The introduction of queens still occupies a prominent part in discussions at beekeepers' conventions and in the bee journals. The beekeeper is looking for a method that requires but little work and yet is sure. While I do not wish to appear pessimistic in this matter, I must say that I do not believe such a method will ever be found. Many of the methods that have been advocated are extremely simple and require little labor, but they are very uncertain and, as the loss of queens is great, they are expensive. If we go to the other extreme and introduce queens to frames of emerging brood after all worker bees have been brushed off, we have a method that is certain in its results; but, on account of the labor involved, it is not practical for the average beekeeper to use when introducing many queens. There are methods in between these extremes, some requiring more labor and being more certain in their results, while there are others that require less labor and are less certain in results. Each beekeeper will have to decide for himself just how much time he is willing to devote to the introduction of queens, bearing in mind that he will have success in proportion to the amount of time and careful study he is willing to put on the subject.

While at the Bee Culture Office of the Bureau of Entomology in Washington a number of years ago I spent some time in reading over the back files of Gleanings in Bee Culture, and I was surprised to note that much the same discussion of queen introduction was going on about forty years ago as is going on today. Yes, and some were as extravagant in their claims of 100 per cent introduction as we are today.

Personally, I have experimented a great deal in introducing queens. One reason for so much experimenting is that it is interesting and fascinating work, and I was anxious to see if there is some method whereby we can "put one over" on the bees. The results thus far have been that they "put it over" on me. Another reason is that I am in position to know of the large loss to the purchasers of queens, and if we can find better methods of introduction, naturally this will encourage beekeepers to purchase more queens.

For a number of years I used perfectly good queens to experiment with, but found this extravagant, especially when straying from the beaten paths, so later I used old queens. This was not a good test, for bees will accept an old queen with perfect serenity, when they would turn up their aristocratic noses at a young queen. In rearing queens, we secure some that are good with the exception of some slight defect, such as the loss of a foot or a stiff joint in the front leg. Usually we have some queenless colonies whose queens have been removed for one reason or another. In such cases I usually use these crippled queens in experimenting and have tried all the "quick" methods that have been recommended. I give here my experience with the different methods. I am sorry that I did not keep a complete record so I could know exactly the per cent of loss, although I remember a number of cases and in a general way know the results.

The Smoke Method

This is one of the quick ones. It has been used in modified forms by many beekeepers for many years with varying results. It was revived and improved upon by the late A. C. Miller.

To introduce a queen by this method, the hive is opened and the old queen removed. The entrance to the hive is closed with grass. Then the nozzle of the smoker is inserted into the entrance and several strong whiffs of smoke blown in. The entrance is closed again for a minute or two, after which the new queen is run into the entrance and the entrance again closed for ten or fifteen minutes. The grass may be left in the entrance till it wilts and the bees are thus liberated.

Some have reported success with this method and some have not. I believe few beekeepers are now using it to any extent. I found that where the colony was not strong and when a honey flow was on, I could get from 70 to 80 per cent accepted by this method. When there was no honey flow, 50 to 60 per cent was the best I could do.

The Tobacco Smoke Method

So far as I can learn, Mr. Alley originated this method. By merely blowing tobacco smoke into the entrance and running in the queen, some report a good percentage of acceptances. For some time I used a combination of the tobacco method and the Miller method and had better results than with either. To use this method, load the smoker with tobacco stems or good tobacco (if there is such a thing). Remove the old queen and close the entrance with grass except at one corner. Insert the smoker and give three or four good puffs. Close the

entrance for about two minutes, then run in the new queen and again close the entrance. If there is no honey flow, care must be taken that the entrance is not opened, for robbers will clean up this colony in short order, as all of the bees are sick and can not fight. After half an hour a small opening may be made. Usually the colony will not recover and get back on the job for half a day or more. When a honey flow is on, the percentage of acceptances will run from 75 to 80 per cent; but when there is no honey flow it will be much less.

The Honey Method

Several have brought out modifications of the honey method, and some have reported success to a greater or less degree. The usual way is to daub the queen with honey and drop her on top of the frames. Some pour honey on top of the queen as she runs in. Personally I have never been able to see that this method did any good except where a large amount of honey was used. In such cases it is more because the bees have a good feed of honey than because the queen is daubed that causes them to accept the queen. However, there is a heavy loss in most cases.

Introducing by No Method at All

Just pick the old queen out and drop the new one in, and if there is a honey flow the acceptance with me has been about 80 per cent. When the new queen is run in at the entrance of a queenless colony, if the bees pay no attention to her, she will usually be accepted. I usually blow a little smoke at the guards, and as they turn tail to and run in, the queen is allowed to go in with them. One day I ran in nine in this manner and eight were accepted. At other times when robbers were around they would kill every one.

Introduction with the Mailing Cage

Probably 75 per cent of the queens are introduced with the common mailing cage. When conditions are favorable an acceptance of 80 per cent is common. When conditions are unfavorable 50 per cent would probably be a fair average. Some who have purchased queens have reported a loss of nine queens out of a dozen. Some have written to me saying that they have purchased queens a few at a time for years and never succeeded in introducing a queen. The temper of the bees and the weather condition play an important part. If robbers are bad, or if the bees are being molested by ants, skunks, or any other enemies, they have a chip on their shoulder and are ready to kill a strange queen as soon as they get a chance. If one wishes to introduce with the mailing cage, the queen should not be released for four days or more. During this time some will die in the cage from one cause on another, probably from being stung through the wire screen. A piece of tin may be nailed over the candy for a couple of days, or if the cage contains a cork over the candy, it may be left for two days. This makes introduction more certain; but, going back to the principle mentioned, this takes more time.

The Use of the Queen-Excluder in Introduction

Several have used the excluder in connection with introduction, and have reported an improvement. When this is used in connection with any cage, my experience has been that it is a great advantage. Some have used this principle on the Doolittle "broom-handle" cage and the Dr. Miller cage, and my experience has been that these cages are superior to the mailing cage. Some time ago Mr. M. J. Deyell reported in Gleanings an improvement in introducing when putting young bees in with the queen. I have used that method at times and believe it is a help. When using any cage, it is best to let out the worker bees that accompany the queen in the mailing cage and substitute young ones. Be sure that they are young and just out of the cell. This can be ascertained by the downy appearance of the bees. If old bees are used they are apt to kill the queen.

Laying Queens Easy to Introduce

All of the above cage methods lack one important feature for safe introduction. A queen that is actually laying is much more readily accepted by the bees. When a queen is in the ordinariy mailing cage she does not lay and is small, lively, and nervous, much like a virgin. It is as much the attitude of the queen as it is that of the bees that causes success or failure. A queen heavy with eggs is not so nervous and is therefore much more readily accepted by the bees.

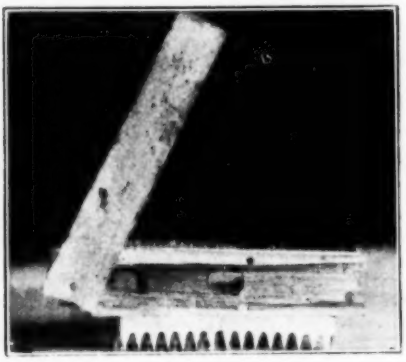
The Nucleus Introducing-Cage

A cage known as the California or Hess cage has the advantage that the queen is laying before getting to the bees. This cage is made of wire screen and holds a full frame of sealed brood. The queen is turned loose in this cage and the frame set into the hive. Personally I never use this cage, but, after talking with those who have, it seems to me to have its limitations. It is difficult to make it tight so that no bees will get in. It will fit but one size of frame and it is bulky and expensive. Some report that the queen is killed when the frame is taken out after the queen is laying. I believe that if the queen-excluder were used on this cage to allow the bees to get to the

queen slowly after a number of young bees had emerged, introduction should be nearly perfect.

Push-in-the-Comb Cages

The principle of the push-in cage is old, but it is good. This cage was formerly made by bending at right angles the edges of a piece of wire cloth. The cage thus formed was pushed into the comb. The queen, being on the comb, begins to lay and later the bees gnaw her out. Some, including Mr. Doolittle, reported a high percentage of acceptances; but in our experience many queens were



The candy-trough on the side of the cage is so arranged that the bees first gain access to the queen through the zinc excluder over the middle hole, then later release the queen through the hole at the left.

released too soon and were killed. This was what caused me to bring out our present push-in cage. This cage has been described in Gleanings, so I will not describe it here, but will comment on several suggestions that have been made concerning improvements on it.

In the July issue of Gleanings, 1925, Mr. E. G. Carr objects to the three visits necessary when using this cage, and is willing to lose a few queens in order to visit the colony but once. My object in this cage was to make it a 100 per cent cage, and, when carefully handled, it is almost that. Still I appreciate the fact that under certain conditions it is not practical to visit the colony three times to introduce a queen. I will give, therefore, the experiments that we conducted before pronouncing this cage finished. The cage described by Mr. Carr is very similar to a cage we used several years ago. The objection was that it was too uncertain, as the bees gnawed under the wires, and in eating out the candy there was an irregularity, some releasing the queen much sooner than others. Then, as the queen-excluder was not used, the loss of queens was greater than we liked.

Mr. G. H. Cale, manager of the Dadant apiaries, brought up an objection to this cage for use in out-apiaries, saying that three visits are not practical. For such cases, I submit a description of an attachment that I used while experimenting with it.

On the side of the cage, as at present made, is a hole with the queen-excluder fastened on the inside. To make the cage automatic, cleats are nailed lengthwise the full length of the cage over the excluder, forming a candy container. A hole is then made in the side of the cage at the end opposite from the opening where the bees have access to the candy. The top cleat on the cage is held in place by two small nails that can be pressed in and pulled out with the fingers. When ready to introduce a queen, this top cleat is removed, the trough filled with candy and the cleat replaced. The cage is then inserted in the comb in the regular way.

The bees begin to eat out the candy and after about two or three days they get to the excluder. The bees then get in to the queen and become acquainted with her. They continue to eat along the trough till they come to the large hole in the cage, when the queen passes out through the tunnel and is released. We did not carry the experiments so far with this style of cage as with the other, but found it very satisfactory, though not quite as infallible as the other. For out-yard work or where one can not give the attention necessary for the use of the two-cork cage, I believe this method will be found ideal.

Summary

Queens can be introduced much better when there is a honey flow. Therefore, in introducing queens with any cage or by any direct method when there is no honey flow, the colonies should be fed sugar syrup. Feeding on the day before introducing and again at the time the queen is to be released will greatly lessen the loss in introduction. In using any cage, success will be more certain if the old bees are let out of the cage and young bees put in. It is a great advantage if the queen can get on the comb, thus taking on the colony odor and having opportunity to lay a day or two before being released from the cage. The use of the queen-excluder is an advantage when used on any cage. The direct methods, such as the smoke method, honey method, starvation method, the drowning method, and various forms of torture, are of little use, and queens will be accepted as readily if they are run in at the entrance with a little puff of smoke. In all the direct methods there will be a heavy mortality and my advice as to using them is, "Don't."

Vincennes, Ind.

BRAULA COECA, OR BEE LOUSE

By Virgil N. Argo

Its Life History, Habits, Distribution in the United States, and the Damage It Does

Braula coeca, the so-called bee louse, was first mentioned in European literature in the year 1740. The species was named by Nitzsch in 1818, but until 1921 there were no accurate observations made on the life history of the insect. The old beekeepers and entomologists formed ideas concerning this interesting insect without searching out the facts to substantiate their theories. These ideas seemed so reasonable and plausible that they were accepted by everyone, and a definite concept of the bee louse was handed down among the European workers, receiving an embellishment here and an enlargement there until an interesting and elaborate picture of *Braula coeca* (the blind louse) was painted. It was said to belong to the Pupipara, which is a group of the Diptera, or two-winged flies. All of this group of flies are parasitic, some are wingless, and all are pupiparous; that is, the eggs hatch within the body of the female and the larvae are retained and nourished there in the oviduct until they attain full size, when they are born and pupate at once. The common sheep tick, *Melophagus ovinus*, is an example of this sort.

The bee louse is a wingless fly and does bear superficial resemblance to certain of the Pupipara, but it lays eggs and the larvae hatch and develop entirely outside the body of the female. This was first shown to be the case by Skaife, an entomologist in South Africa, who described the egg of *Braula coeca* in 1921. Some of the older workers had gone so far as to describe the so-called mammary glands which they thought they saw in the walls of the oviduct of the female *Braula*, and which really exist in the case of the true Pupipara, and they drew on their imaginations so strongly that they saw it in this insect where it did not exist.

Manner of Feeding

The original idea was that the bee louse had piercing and sucking mouth parts and was in the habit of riding on the backs of the bees, preferably queens and drones, penetrating the chitinous covering of the host and sucking up its vital fluids in the most approved louse fashion. This theory was published both in Europe and in this country. But in 1907 Locy in Hungary observed that the louse fed by sucking up some material secreted at the bee's mouth. This was confirmed this last summer in this country by caging some drones which had specimens of *Braula* adhering to them. The drones are slow-moving and not so easily excited as the workers, so that the observation was easily made. The louse fastens its hind pair of feet in the hair of the bee's face and then claws at the labrum, or upper lip, of its host with the other four feet until it gradually extends its tongue. At once the louse moves forward and inserts its peculiarly adapted mouth parts into a cleft at the base of the bee's tongue and sucks up some material that it finds there. The old idea was that the louse was a true parasite, but these later observations seem to show it to be a commensal, an uninvited and unwelcome guest in the beehive.

Queen with newly emerged Braula clinging to her head, thorax, and abdomen.

Distribution in the United States

In the past it was thought that the louse would not become established in this country, since it was a pest of southern Europe. But it has been found in northern Europe in conditions of climate as rigorous as are found in the United States. Investigations this past summer show that it has become established in certain sections of this country. *Braula coeca* was first reported as being found in colonies of bees in this country by Prof. Enos H. Hess in 1918, who discovered it in his hives at Grantham, Pennsylvania, near Harrisburg. The next report came from Mr. Rockward Nusbaum in 1920, when he sent to the Bureau of Entomology specimens of *Braula* from his apiaries in Carroll County, Maryland, just north of Frederick. Mr. Nusbaum is the largest producer of honey in the state, almost all of his crop being extracted. He reports that for five years previously he had occasionally noticed these insects, but thought that they were drops of

propolis on the backs of the bees. It was not until he saw one move that he realized that they were alive. This is easily understood after one has tried to collect the adults from an infested colony. When a louse is found riding on the back of a bee it appears to be a most noticeable phenomenon, but should the observer look away for only an instant he may have to look for some time to find the

Female Braula coeca.

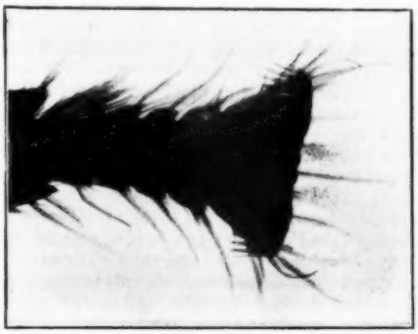
same louse again. It was among Mr. Nusbaum's bees that this past season's observations were made. He has extended every courtesy and every possible help in the study, and without his co-operation the work could not have been done.

This last summer *Braula* was found to be well established in central Maryland and southern Pennsylvania. One definite record of its occurrence came from a point about forty miles south of Rochester, New York. Climate is probably not the fundamentally determining factor of distribution, because the insect spends most of its life within the shelter of the hive, where the temperature is maintained fairly constant, winter and summer. The lice do go out of the hive, riding on the backs of the bees, for they have been seen on bees that were getting water, and swarms that issue from infested colonies are found to have lice; but they prefer to stay in the hive and are found most abundantly where the bees are clustered on the frames of brood. The fact that the eyes of *Braula* have almost entirely disappeared and perhaps do not function can be attributed to its life within the darkness of the hive.

The foot of the bee louse is a most remarkable structure, wonderfully adapted to the insect's mode of living. The feet are five jointed, and attached to the extreme edge of the last joint of each foot is a comb of about thirty fine teeth, closely crowded together. When the louse settles down on the thorax of the bee it draws these combs through the branched hairs of its host and firmly anchors itself. Sometimes it sees fit to run about over the body of the bee, in which case it seems to fold the combs under its feet and to use its highly developed pulvilli, or stick pads, also attached to the last segment of each foot, in the same manner that the ordinary house fly does.

Larvae of Bee Louse Tunnel Through Cappings

The *Braula* develops from eggs laid on the under surface of the honey cappings, presumably just before the cell is entirely capped over. The eggs hatch into minute larvae or maggots, which start at

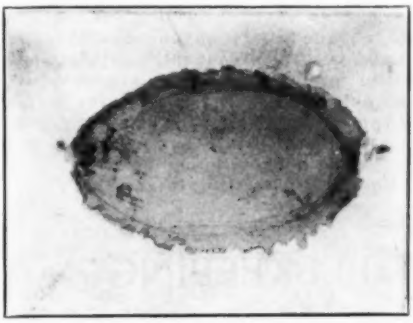


Foot of Braula coeca, showing tarsal comb and pulvilli.

once to make covered galleries or tunnels on the under side of the cappings. At first the tunnels are minute and the wax particles are powdery and loosely put together, but as the larvae grow the tunnels become longer and of greater diameter and their walls smooth and compact. At its greatest diameter a tunnel is not more than half a millimeter in width. A single tunnel may become branched and may extend as far as two inches across the comb. When the larvae become fully grown they hollow out pupal chambers in the cappings, at or near the ends of their tunnels, and transform into pupae there, remaining within the last larval skin. When the adults are ready to emerge they push their way from the pupal chambers by means of a sack or ptilinum which bulges out from their foreheads through the frontal suture.

When the adults emerge they are white or yellowish and their body covering is soft and delicate. They gradually become darker and their chitin hardens until they are of a dark reddish-brown color and their integument becomes almost as hard as that of a beetle. When these newly emerged lice are first seen they are observed to be clustered on the queens. The lice on the workers and drones are the

dark-colored ones and it is an exceptional case when a light-colored one is found on a worker. But the queen in a badly infested colony may have as many as thirty-five to forty clustered over her thorax and abdomen, and even on her head. The explanation of this phenomenon is still problematic and will be investigated further, but it would seem that the newly emerged *Braula* seeks refuge on



Empty egg-shell of Braula coeca.

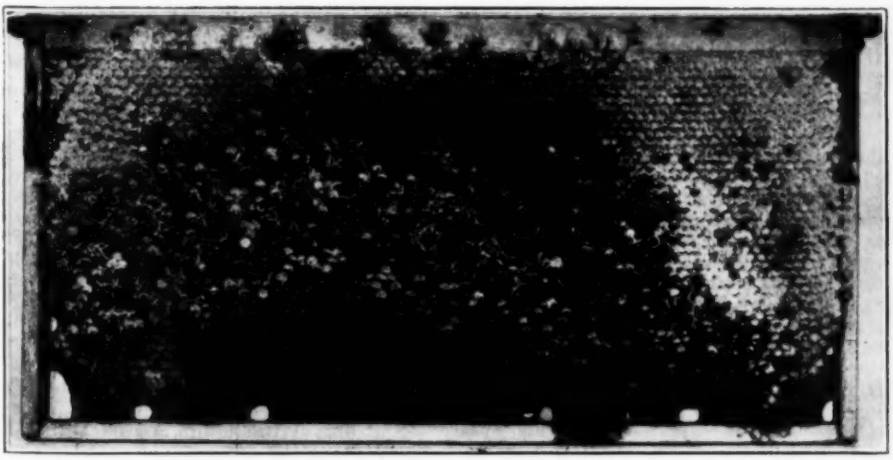
the queen during the period in which it is waiting for its body covering to harden. The queen seems to make little effort to rid herself of the pests, which are easily dislodged in their newly emerged state. Workers are more vigorous in their movements and have been observed to scratch at the lice when they get on the sides of the thorax or abdomen. The dark-colored lice found on the workers are able to keep such a firm hold that the bees can not dislodge them.

The difference in life-history dates as affected by the honey flows of various regions has not been studied, but in the white clover section of Carroll County, Maryland, it is found that in the spring only adult lice are found in the colonies, and it was not until June 12 that the first signs of active larval tunneling occurred. During the latter part of August the first lice were seen on queens, and these light-colored, newly emerging specimens were seen almost exclusively on queens as late as October 20.

Retards Work of Queen and Damages Comb Honey

This period of emergence and the ensuing clustering of the lice on the queens is of importance because at this time the beekeeper is trying to get his queens to lay the maximum number of eggs to insure a large force of bees to go through the winter. Mr. Nusbaum introduced two hundred new queens during the first part of September. The queens which were removed from infested colonies were found to be encrusted with lice, and examination of these same hives at a later date showed that where new queens were introduced into an infested colony at this time they soon became covered with lice. Mr. Nusbaum is convinced that this largely defeats his purpose in requeening at this time, and believes that the egg-laying of the queen is retarded by the pests clustering on her in this fashion.

The bee louse can cause damage in another way: it may cause the cappings of the honey to be so badly tunneled as to be unsalable if produced in the form of comb honey. In some of Mr. Nusbaum's colonies which filled four full-depth ten-frame extracting supers this past season, the cappings were found to be heavily



Comb of honey showing extensive tunneling by larvae of Braula coeca. When such tunneling occurs in comb honey it is rendered unfit for market.

XUM

tunneled in all the supers, the lines of the larval galleries showing through the cappings as a fine network all over the frames. Comb honey has been bought in stores with the tunnels showing plainly, and Mr. Nusbaum tells me that this past winter he has often seen badly tunneled sections of comb honey for sale in the Public Market at Washington, D. C.

If beekeepers throughout the country will be on the lookout for the presence of *Braula* and will inform the writer or Dr. E. F. Phillips, at Cornell University, if any evidence of its occurrence is found, the information will be very gratefully received, since these observations will be continued during the coming summer. When the hives are opened in the spring any capped honey in the brood-nest should be examined, and if any lice are present their last year's tunnels will be seen under these cappings. It is sometimes rather hard to find the adults, and, even though they may be present, they may escape observation. Perhaps the best time to determine whether the lice are present is in the late summer. At this time there is plenty of capped honey in the brood-chamber, affording excellent opportunity to see the larval tunnels, and also at this time there is a chance to see the young lice clustered on the queens. If anyone should find a comb with questionable capping, the writer would consider it a great favor and help if he would remove the portion of cappings that appears suspicious, put it in a small cardboard box, and mail it to me at the address given below.

Cornell University, Ithaca, N. Y.

THE POETRY OF BEEKEEPING

By J. E. Crane

An Occupation Which Reveals the Wonderful Order and System of the Universe

A writer some three thousand years ago, more or less, noted the fact that the fool had said in his heart, "There is no God." This interests us, for it shows us how some people were thinking ages ago, before the advent of locomotives, automobiles, flying machines, radio, or daily newspapers crowded with crimes and casualties.

But there appear to be some today who are thinking in their hearts as the fool thought ages ago, and trying just as hard to convince themselves that they are right. I am glad to say there is probably not one keeper of bees among them. They know better. Their business brings them constantly in contact with Nature and they can see on every hand evidences of the wisdom and goodness of the Creator.

Beekeepers Live Close to Nature

And this is one of the charming things about the business. If there is any one I pity, it is the man or woman who is shut up, day after day, engaged in the monotonous work of watching a machine, or making the same thing over and over again until they can do it with their eyes shut, or one sitting at a desk adding up endless columns of figures, or sitting at a typewriter hour after hour through the day while out of doors the sky is blue, the grass green, the air laden with the fragrance of flowers and vocal with the songs of birds and the hum of bees.

The beekeeper, if he keeps his eyes open, surely lives in a wonderful world. He sees the harmony of life about him. He sees endless methods of producing results. For instance, plants, for their welfare, require cross-fertilization, and produce pollen for this purpose. That insects may be attracted, nectar and fragrance are provided to invite them and supply them with food. How do plants know? Many plants produce no nectar. Some other method is worked out to get their pollen carried to pistillate flowers. Have they weighed the atmosphere or found out its specific gravity?

One thing is certain—they have produced pollen so light that it floats in the air and the wind wafts it to the pistils of other plants just as surely as the bees can carry it to other species of plants. Surely either plants can think or some One must have planned for them.

Wonderful Adaptation of the Honeybee

A little study of the bees reveals how admirably they are fashioned to perform their life work and maintain their place in the world. Their bodies are covered with hairs for collecting the minute grains of pollen, while with their forward legs they can remove it to baskets formed by a row of hairs around the flat thighs of their hind legs. How simple and yet how efficient are they in gathering this manna so necessary in the rearing of brood! Did they work out this plan, or did some One do it for them?

Has the reader of these lines ever examined the fore legs of a bee under a glass, and observed the circular opening at one of the joints, a perfect brush for cleaning the antennae of pollen grains or dust? How wonderful are the antennae of bees! and how perfectly adapted

to assist them in finding their way about the dark recesses of the hive, building their combs, or feeding their young! Without them a bee can do nothing.

The tongue of a bee is wonderfully adapted to collecting the minute atoms of honey found in the nectaries of flowers or the feeding of larvae.

I have often been surprised to learn the large amount of power required to support a flying-machine and propel it through the air; but the problem has been solved for the bees by their powerful wing muscles, so they can not only support themselves but carry a heavy load besides.

The ability of the bees to produce wax exactly adapted to their need in comb-building will always secure the admiration of a keeper of bees. When bees began to store honey, some way had to be provided to protect it from other less industrious insects or animals. The problem was solved by giving every worker bee a sting. We used to think the sting a little sharp instrument like a pin or small needle, but we have found it instead a compound instrument of marvelous delicacy and adaptation of the several parts to secure results.

Two delicate, hollow barbed shafts, or stings, so small as to be just visible to the naked eye, enclosed by a strong sheath to give them strength, powerful muscles to force them into or through the tough skin of all intruders, and a small sac filled with a most virulent poison, comprise the different parts. These working together can strike terror to man or beasts or to other insects. Here surely is planning of a high order.

Not only do we find thought and plan in the anatomy of bees, to which I have briefly called attention, but their instincts seem even more wonderful. How do the young bees, just emerged, know how to prepare food and feed the larvae, when to stop feeding and seal over their cells, or how to rear a queen? Who told them that a queen larva requires more food than a worker larva? Who taught them to load themselves with honey when they swarm? Where did they learn how to prepare wax and weld it into comb of exquisite beauty and mathematical accuracy? But if we live in the open there are other things to attract our attention and arouse our admiration.

The Procession of Flowers from Spring to Fall

Think of the procession of flowers from early spring until autumn. How did the birds learn to come north to rear their young? Who gave them their affection for their brood? Some years ago I was eating my noonday lunch at an out-apiary when I noticed a pair of birds in great distress. I went to their nest and found a snake had climbed the tree and was about to swallow their young. I killed the snake and prevented a serious tragedy.

The weather is always of interest. Today it may be warm and tomorrow cold, or the wind may change in some unexpected way. One day it may be cloudy and the next clear. It may be rainy this week and dry the next, or, as often happens, a drouth may set in at a critical time, just when we think we most need rain. The days art hot and sultry, when to our surprise the clouds gather, a low rumbling is heard, the bees rush to their hives, the birds hide in the foliage, the lightning flashes from cloud to cloud or from the clouds to the earth, and soon the rain falls in torrents. We look up and smile, and say with one of old, "Thou visitest the earth, and waterest it, thou greatly enrichest it; the river of God is full of water." What a change in a few brief hours!

J. E. Crane, 86 years old and with a spirit in tune with the universe, keenly enjoys bee-keeping.

Let those who can, find comfort in thinking this old world is running wild. As for us, we are thankful that we are not on a fast-speeding railway train without conductor or engineer, or on a planet without One to guide the development of its life and direct its affairs, although we may not understand all the mysteries with which we are surrounded.

Middlebury, Vt.

PRODUCING HIGH-GRADE HONEY

By Morley Pettit

Improving Color of White Honey by Keeping Separate Darker Honey of Early Spring and Fall

One of the most important factors in the co-operative sale of honey is the production of as large a proportion as possible of high-grade light honey. After the honey is extracted the best that can be done is to use the grader and see what we have. If a large percentage of the crop grades as manufacturing honey, or is too dark to go in with number one light honey, it is the member's loss and there is no remedy.

But in an average season the member has it in his power to extract practically all the light honey his bees produce as such, and in a well ripened form. It is all in the season's management in the apiary and in a judicious selection of combs as they come to the extractor. Colored honey is produced in May and early June and again in August and September. Most of our light honey is produced in late June and in July and perhaps early August. Food-chambers, where used, should be gotten free of brood if possible to allow a large proportion of the spring honey to be stored in them.

Extracting Spring Honey at Beginning of White Honey Flow

When clover honey starts coming in it is the practice of some to extract all the spring honey from supers in which light honey is to be stored. Personally I have found it better for several reasons to leave this honey right in the hives and mark the top-bars of combs containing it in such a way that they can be easily distinguished throughout the summer and when they come to the extractor.

For one thing, we have learned to our sorrow that we can never be sure that the main honey flow has really arrived, and it would be a misfortune to find, after extracting most of the honey out of the hive, that another period of dearth had set in. With food-chambers this is obviated, but not the second point, that much of the spring honey is probably unripe and would have to be hurried off as manufacturing honey if extracted in that condition. Then, if nuclei for queen-rearing or increase are to be made, these marked combs of spring honey can be given to them instead of more valuable light honey. So long as we have a good market for well-ripened amber honey of the lighter shade I think it pays to let any that is not well sealed remain to be finished off with clover—that is, so long as it is identified and kept separate from the light-grade honey.

When supering during the clover honey flow we know that it increases the yield to super quite freely. This can be easily overdone, however, and, so long as there is foundation to be drawn out, that should be given exclusively after the hive has nearly as much comb-space as the colony is likely to fill well. A super of foundation placed under three supers of combs which are in early stages of capping will not check gathering very much, but will cause outer combs and corners to be filled out and all to be bulged and sealed in a more satisfactory manner than if more combs had been given for more spreading-out of unripe honey. At the same time the foundation is being drawn out, surplus wax is used, and young bees are employed and a place prepared for more storage if the flow fortunately exceeds our expectations. When foundation is not being used, extra combs should be placed on top of the stack at this stage instead of underneath.

Keeping White Honey Separate from Buckwheat

At the time of putting on the escapes to take off the light honey, only ripe honey should be removed, as it is better to have well ripened colored honey than unripe light honey. Quite often the last super given is only partly sealed and it may be necessary to do some sorting of combs. I would say that every comb should be nearly half sealed and of course the vast majority of them entirely sealed. What I mean is that, if a hive has two or three supers fully sealed, I would sort out, of the last super put on, the combs that are at least nearly half sealed, leaving the balance to be filled with dark honey. But if there happens to be a good honey flow on at the time, so that nectar will shake out of these combs, I would leave them anyway and hope to save them from buckwheat on the next trip around. Much depends on weather conditions at the time of taking off, as ripening proceeds much more rapidly in dry hot weather.

Care in Extracting Improves Quality of Honey

Contrary to common practice, when taking off and extracting are going on at the same time, I give my attention to the extracting-room, as I would rather trust a conscientious helper to take off and draw home honey than to run the extracting outfit. If there are no weak or queenless colonies in the yard and he has had fair experience, he is not going to start robbing; but there are several

little things that can go wrong about a power extracting outfit, and by no means the least of these is the mixing of colored honey with the lighter grade.

The uncappers have their full instructions about sorting combs, and the experienced man can operate the extractor and keep watch on the kind of combs that are passing through their hands at the same time. He also watches the color of the honey flowing from the extractor and makes the very best use of this, his last chance to improve the quality of his number one grade. So long as beautiful clear honey is flowing from the gate the operator's only care is to see that all poorly sealed combs which may have escaped the yard sorting are rejected now. These are collected in supers and returned to the hives for further ripening at the earliest opportunity. Marked combs of spring honey are easily sorted out—if the uncapper does not get to visiting and forget. It is the operator's business to see that he does not.

The appearance of the capping usually reveals to the watchful operator any combs of mixed honey which have escaped the spring marking, or have been caught by early buckwheat. The former will be dark near the top, the latter near the bottom. These are tested by pressing the point of the knife flatly into the capping to cause a little honey to run down over the blade. If any color is detected the comb should not be uncapped and extracted with light honey. This is grading before the damage is done—locking the stable in time to save the horse. Eternal vigilance is the price of success.

Proper Use of Capping-Melter

Now as regards the honey from cappings. I use a capping-melter, specially constructed for steam from a real boiler. It has a flat surface from which honey and melted wax can flow just as soon as the wax is melted. Great care has to be exercised to see that no water can leak from the melter into the honey, also that the honey gets away from the heat just as quickly as possible. It flows through a separator which retains the wax but allows the honey to pass on and join the stream from the extractor. This cools it and checks the ill effect of heat on it. On the other hand, it warms the honey in the storage tanks, causing it to clarify better than if it is stored away cold.

I know I am on dangerous ground in mentioning the capping-melter, and I would condemn the use of any but the very best steam-heated kind obtainable, and that used only under the eye of the careful beekeeper himself. But it is a wonderful labor-saver, and I will defy any but possibly the very most expert taster to detect its effect on my sample. In fact, I believe that, if anything, it would improve the sale of honey to have just the faintest waxy flavor, as so many people prefer to buy comb honey with the wax in it.

Blending to Produce Uniformity in Color and Flavor

Large blending and settling tanks constitute a very important part of an extracting outfit. Foam always rises on honey after extracting. This should be skimmed off before it is placed in selling packages. Then there is bound to be a variation in the color, flavor, and body of honey from different supers. Certain colonies discover flowers that the others do not find. The observant beekeeper has often noticed very early in the buckwheat honey flow that a few colonies have stored quite a lot of dark honey when the others have not stored any. I believe the mixing of hot honey from the melter which warms the whole bulk is of great assistance in the blending which takes place in our 2400-pound storage tanks. To make the blending more positive, I have run the pipe which conducts the honey from the pump to the bottom of each tank, so that even when the tank is nearly full the last bit of warm honey pumped in would have to rise through the whole bulk before it could get to the top where its lighter weight would like to take it. Besides this, we mix supers from the different yards coming to the extractor to get as nearly as possible an even uniform sample throughout the whole crop of any one grade.

Georgetown, Ontario.

A nice yard of bees.

INFLUENCE OF ENVIRONMENT

By Phillip J. Baldensperger

Part Played by Mountains, Seas, Deserts, and Food Supply in the Development of Races

[This is the last of the series of articles on the races of bees by this author, the first having appeared in the February, 1925, issue of this journal.—Editor.]

Arab historians living in the days of the great Abbaside Khalifes, who supported them with royal gifts, tell of bees and their usefulness. Much of their knowledge was taken from the ancient Greeks, but every one adds some personal experience. Kamaliddin, in the fourteenth century, observed that bees gather pollen always from the same species of flowers; also that the bees did not fancy the Grecian glass hives, but propolized the glass. The Arab naturalists had observed that Greeks were, as a rule, keener observers, and they accepted Grecian theories rather than the old Egyptian ones. A more democratic spirit is seen among Arabs, Greeks, and Larins. They are influenced by equality of man, intellect being the only superiority. No hereditary leaders could maintain themselves for any length of time. Natural selection can be traced all through the nations around the Mediterranean sea, as well as through the bees. Despotic Pharaohs were Africans and are now known only as mummies in museums and tombs, and the Egyptian bee is influenced by its surroundings to change into the lazy or careless bee of modern Egypt.

Whether Cyprus, the cradle of the yellow Mediterranean race, ever had any progressive beekeeping is hard to tell. We know that by natural selection, by scarcity of honey plants, and, to some degree, by cold weather, the Cyprian race is a very sturdy bee, but, like all Orientals, is bad-tempered because of the scanty honey plants and the numerous predaceous insects. The Cyprians hold a unique position in beedom, Cyprus being separated from the Syrian mainland by about a hundred miles of water, which has kept this race of bees in its greatest purity, a position which only the Saharian bee can equal in its isolation by sandy wastes and high mountains. Greeks and perhaps Phenicians, as seafaring nations, had hardly any honey to export from Cyprus, but they carried bees toward the west. The influence of D. A. Jones and Frank Benton in Cyprus is to some degree still continued, since two beekeepers who learned how to manage and export bees have continued in the work. Luigo Giordano, born in Cyprus, and an aid to Benton for many years, exported Cyprian bees to improve the Egyptian bees in the Khedivial farms, and Dervishian, an Armenian, who was a competent observer, raised many queens for export. His son, P. Dervisian, is still carrying on queen-rearing in the island.

Bees Become Gentle in Country Devoid of Fruit

The Tellian bee inhabiting the island of Malta was probably brought over by the Carthagians and Phenicians. Through its long isolation it has lost a good deal of the ancestral bad temper. The bees kept in modern frame hives were very good-tempered when visited by the author in 1891. Both of the owners, as well as those in the Jesuit College, agreed that honey was rather an exception on those rocky heights of the island.

The islands of Malta and Gozo being devoid of fruit, hornets and wasps are not numerous. The hives kept in earthenware tubes on the central plateau about Phenician ruins were easily handled with a blow of smoke from a cigaret, which could never have been done with a colony on the shores of Tunis. The hives were made by adding tubes in good seasons or taking them away in poor seasons, but always in a horizontal direction, each tube not being over one foot in length and 10 to 12 inches in diameter. Wherever Arabs have passed a number of years or centuries, their hives or the method of placing them has been left. Arabic names were given to hives, bees, and honey.

In Malta bees are known as "nahel," to the half Maltese, half Arabic-speaking population. This same name is likewise used from Mecca to Morocco. Herodotus tells us of the Numidians selling honey, yet the Berbers, who have a language of their own in the north of Africa, employ only the Arabic names, "nahla" for the bee, and "assal" for honey. The Arabic form of hive introduced into Spain in the early centuries has gone over with the Spaniards to the island of Cuba and others in the Gulf of Mexico.

Influence of Locality Having Late Honey Flow

So all over western and central Europe bees and their owners have adapted themselves to the country they have inhabited, forming groups or races and varieties according to their environments. So likewise the heather bees in Holland and northwestern Germany have become, according to Buttel-Reepen, the

dark bee, greatly inclined to swarm because it inhabits a region having late honey flows, buckwheat and heather, which have been utilized by man for centuries, not through the influence of man as supposed by Lehzen, not a product of human selection, but an outcome of natural selection. The swarming fever has been so intense that the heather bee, the ancestor of the American black bee, runs from the combs as soon as they are handled. Though now for nearly two and a half centuries residents of America, the characteristics acquired in heather-fields still persist.

Whether the original brown bee still exists in Germany is doubtful, because fifty years of steady importations of Italian and Carniolan queens has probably modified the bee found there previous to 1850. The Germans have adopted hives in conformity with those once chosen by the bees themselves. The "Klotz Beute" and other "Beute," which means the "log spoil" and other "spoils," show the conservatism remaining from days when honey was "spoil" taken from the bees, hence the name given to the hive. It will be a hard fight for modern beekeepers to influence the old-type beekeepers to cause them even to try the hives opening from the top, a practice begun in Greece ages ago, going through Europe and finding its higher development in America; but Dr. Enoch Zander and some other progressive beekeepers are already advocating the hive opened at the top and are making some progress against the old type of hives.

Over forty years ago the great German apicultural master, R. Dathe, looked with disdain on the Baldensperger hive in Jaffa, saying: 'It is just a little better than the tube hive," even though that movable-frame hive had given 300 pounds of orange-blossom honey in the course of a few weeks. This was the American top-worked hive, and the breach-loading hives of Germany had never yielded more than 50 or 60 pounds to the hive.

When, after the Great War, the Germans had been expelled by the British government of Palestine to Egypt, the breach-loaders, or side-opening hives, were carried from a German colony to the thyme region toward Ascalon, in Philistia, by Jewish beekeepers who knew only top-opening hives. The summer of 1920 was a fair honey season, and the Jews drew out comb after comb with the "wabengabel," or comb fork, and extracted beautiful honey. When they tried to replace the frames it was a different matter, because the frames stuck here and there and would not move. After several hours of useless work the bees had become excited and robbing was going on badly. Disgusted and frightened, Reuben and Benjamin left the frames in a pile and abandoned the job. The authorities now remembered that a French beekeper was in the region, and could perhaps straighten out the mess, so Emile Baldensperger came, and, having seen the situation and knowing the peculiarities of the German hives, cleaned the supports of propolis and returned the frames to their hives. A year after this incident in 1922, the Germans still maintained that their hive was the best because the grand apicultural master, Dzierzon, had said years ago, "The breach-loaders are, all the same, superior to the top-worked hive."

High Mountains a Factor in Development of Races

Carniolan bees have been formed by the crossing of northern brown bees with the yellow strain advancing from the south, meeting on the plains of Carniola. Bordered by the Corinthian Alps on the north and shut in for centuries, the bees kept in low hives became an almost fixed race. It is perhaps better to say almost, for here and there yellow traces are seen more defined than in other places where the gray predominate.

Swiss beekeepers have been fighting hard to banish bees of foreign blood and to return to the brown Swiss strain which gives them every satisfaction, producing fine comb honey, as much as their honey plants allow. Moreover, being a hardy strain they clean out combs infected by European foul brood.

The same can be said of the strain of brown bees of southern France kept pure for a quarter of a century by the author because of the great barrier of the Maratime Alps, which shut them off from contact with Italian bees. European foul brood, which at times has come down from neighboring apiaries, found here lively bees to fight it, and they completely held it at bay without its being necessary to change a single comb or to introduce any foreign blood.

Effect of Inbreeding

Does in-and-in breeding affect bees enough to make a degenerate race? This has often been discussed, and it has been recommended to refresh the stock by foreign blood. Let us see if in that natural state where closely related bees were mated the race was affected. Isolated areas, whether they be surrounded by water, mountains, or sandy wastes, may be considered as bee islands. The island of Cyprus has never had foreign bee blood, at least not for the last three thousand years, and yet the bees of the island, all

inter-bred, are as sturdy as can be, and, as we have seen, gather hundreds of pounds of honey when given a chance to do so. The same can be said for the Saharian bees, shut in by mountains and sand. No sooner were they brought to the Alps than they filled their hives as much as any other bee could have done, yet surpassing others inasmuch as the bees flew farther in search of food. The Egyptian bees, shut in by sandy deserts on all sides, have certainly been inbred for the last four or five thousand years. Did this inbreeding influence their honey-gathering qualities? Certainly not. Brought to the Alps directly from Egypt, they continued to gather as little honey as they did in Egypt, simply because in Egypt winters do not compel the bees to prepare honey for winter quarters, and because no living being will or can change its age-long habits in the course of one or several generations. Evolution is extremely slow and if Egyptian bees would be given twenty or more years of careful selection in a honey-producing country with very severe winters they would ultimately change their habits.

Bees can stand heat and cold with greater facility than is possible for any other being except man; but men and bees have been almost inseparable companions, and where man goes, we may say, bees go—at least bees go wherever modern civilized man goes. America and Australasia, curious to say, were, for some unknown reason, deprived of the species *Apis mellifica* until man introduced them. Why, no one can say. The islands of Java and Borneo both have *Apis dorsata*, and yet the neighboring Australia has not a single species of the genus *Apis*—or at least had not until recently. W. E. Shuckard, in his Natural History and Economy of the Bee, 1866, says: "Collections exhibit about sixteen species of the genus Apis, whose natural occurrence is restricted to the Old World, for the genus, especially the species *Apis mellifica*, has been naturalized in America, and also in Australasia, and in some of the islands of the Pacific. These were originally conveyed thither by Europeans."

How bees have been influenced by environment or shut off from intercommunication by intervening obstacles, barriers of sea, sandy deserts, or flowerless regions, as well as by high mountain ranges, has been shown in the above pages. A short conclusion seems to be necessary.

In the warm climates of the two countries where man began to write down his discoveries and observations—two typical lands of our infantile dreams, Egypt and Hindoostan, where the lotus grows and the sun shines—we have the fakirs and indolent bees. "Tomorrow may again be a sunny and honey day; so, let us not hurry and gather stores, which depredating insects may carry off over night. Tomorrow, *In sha Allah*" (please God).

Nature of Bees Affected by the Abundance or Scarcity of Food

In Palestine, when harvests are plentiful and hives full of honey, or flowers all around, the happy fellah awaits the first full moon in spring to wed his sons or daughters. Dances and songs can be heard. You catch the happy hum of the full hives of *nahel* (bees). And if a year of failure follows, the unprepared fellah who has not laid up for a rainy day, but has a number of children to provide for, will partake of the sentiments of the Palestine bees, which breed till late in the fall, for "*Allah kerorm*" (the Lord is bountiful), both say or think as they look for a better harvest next year.

Our friends, the Berbers and Saharians, will build their lodgings as miserably as can be if there is no better material, and will live on what the scanty environment offers them, the fruit of the palm tree to man and the flowers of the same to bees. When bees have fertilized the palm flowers, and greedy man has gathered the fruit, and the honey from the few hives, he just finds a scanty living, and never accumulates a great deal, nor does the population increase. And bees do the same. They have learned to fly far in search of this food and will occasionally take back the honey if they find the uncovered pots.

The lurking Berber, though he may have sufficient food, may join any expedition to bring home some spoil, simply for the fun of the raid; and the yellow Saharian bees in like manner have been seen to join a passing swarm of brown bees. French Provencal bees group together for winter around their well-provisioned stock of honey, and stop brood-rearing in time not to have superfluous mouths to provide for, thus wisely saving some honey for future necessity. And so does the far-seeing Provencal have a *petite famille*, as he calls it, and the "*bas de Laine*," or reserve money, for an emergency. The hundreds of pounds of honey gathered yearly by the Golden-Italo-Americans in the rich honey regions of the States, we will leave to the busy people in America to decide whether they have influenced the bees, or whether the circumstances influence both man and bees.

Nice, France.

FROM THE FIELD OF EXPERIENCE

EXTRA ROOM FOR RIPENING HONEY

Rapid Storing of Much Thin Nectar May Slow Down Work of Colonies

From the testimony of many it seems that there are seasons when fireweed in the Northwest fails to yield nectar, at least in some localities. While the best of management can secure no crop where there is no honey flow, I am led to believe that there are times when, with colonies in prime condition and with weather suitable for honey-gathering, a good flow may be on without producing results, because in our management during the honey flow we fail to take into consideration some conditions not found generally elsewhere.

Last summer in my locality the honey flow appeared to be intermittent, but there was evidence to show that it was in reality continuous. In the interim between periods of prosperity an examination of the fireweed blossoms revealed the presence of nectar noticeably sweet to the taste and at least fairly abundant. The weather was moderately warm and sunny, but not many bees were to be seen on the blossoms, and work in the supers progressed indifferently as compared with some days before or after. Evidently something besides the mere presence or absence of nectar or the other usual conditions has a bearing upon the size of the honey crop.

In making the most of a yield from fireweed, it should be noted that it is an extra-long step from the raw nectar to the ripened honey. The former seems to contain a higher per cent of water than does the nectar from most other plants—possibly more than twice as much as that from clover or vetch. On the other hand, the honey, when finally reduced and ready to be sealed, is of unusual body and density. This would not be suspected from its appearance in the bottle, for it is often almost as clear as water; nevertheless its viscosity is apparent and its weight is well in excess of twelve pounds to the gallon. In other words, its water content is low. Thus the ripening process means the evaporation of more than the usual amount of water.

Evaporation can of course be accomplished most rapidly in hot dry air. This, in the words of a certain small boy, is exactly "what we have everything else but." Visitors in the coast region in July and August will recall the cooler air laden with ocean ozone about the time they approached the coast mountain divide. And as for dryness it is hardly sufficient to stop with the statement that the period of fireweed bloom is almost or entirely rainless. For, although Old Sol may beam upon us daily, if you do not detect the moisture in the sea-breeze or note the occasional morning fog, you have but to glance at the grasses that stay green all summer, and recall that this is a land of milk even more than of honey. True enough, there is an occasional dry spell when the weather bureau warns of the danger of forest fires because the humidity is low, and the smoke-filled air or red evening glow bears witness of its timely announcement. But a day or two later comes the statement that the fire hazard is less because the humidity has noticeably increased.

The difference between air at a humidity of 50 per cent and that at 90 per cent is apparent when it is noticed that the former lacks 50 per cent of being saturated, while the latter lacks but 10 per cent. Hence evaporation may take place five times as fast in one case as in the other. In saturated air no evaporation can take place at all, except as the relative humidity is reduced below 100 per cent by the heat generated in the hive. Under these conditions the gathering of nectar becomes similar to the question of the dog chasing the railroad train: it is not so much whether he will catch the train as what he will do with it if he does.

Having, then, the necessity for the evaporation of a considerable amount of water in the ripening process, and an atmosphere not conducive to rapid evaporation, it behooves us to make conditions for ripening as favorable as possible. The writer does not presume to say how this can best be done in all respects, but no doubt all will agree that, if the premises are correct, plenty of super room is essential in order that the nectar may be spread out over as much surface as possible. If a colony working in three comb-honey supers does not cap the sections as rapidly as desired, reducing them to two supers does not, in my experience, materially hasten the job. On the other hand, if more supers are added, the work progresses in all without greatly retarding the finishing of the original ones. This would appear to be even more applicable to the filling of extracting supers where the comb is already drawn out; and indeed two cases known to me bear out the statement that a surprising difference in average colony yield may be ob-

tained by getting the bees into as many supers as possible.

Under such conditions it is perhaps needless to say that the hives should have all the sunshine possible. Also, since relative humidity increases as air rises and decreases as it descends, it would appear that a location not too high is most advantageous—another reason for following that old and valuable injunction about locating in a valley and letting the bees haul their freight down grade.

Since fireweed localities differ considerably in topography and climate, even within short distances, it is probable that the above statements regarding humidity do not apply equally to all. I am convinced, however, that, in general, summer humidity is high where fireweed thrives. This applies not only to the coast mountain region, but also to the west slope of the Cascade range, according to a ten-year average made by the United States Weather Bureau.

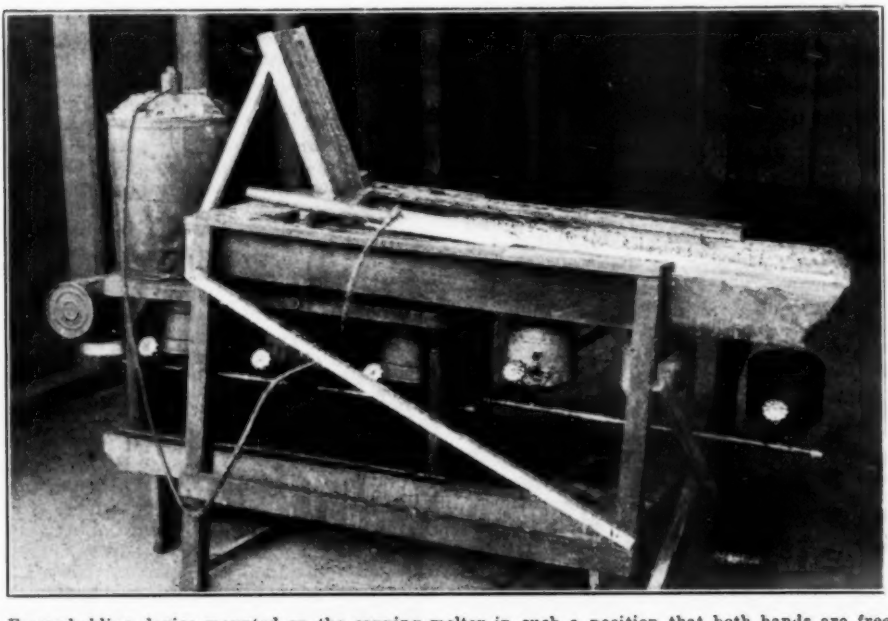
Forest Grove, Ore. W. L. Arant.

LIGHTENING LABOR OF UNCAPPING

Frame-holding Device and Long-handled Knife Permit Use of Both Hands in Uncapping

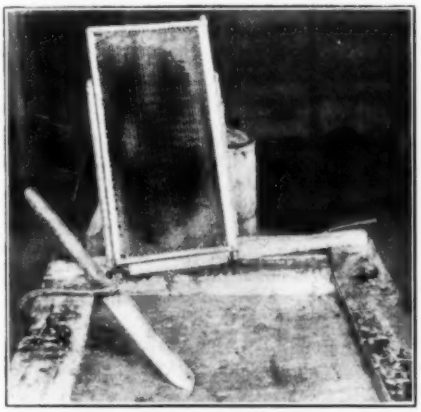
It is said that necessity is the mother of invention, and it was from necessity that I hit upon a scheme to lighten the labor in uncapping my honey. At best this is a tedious and tiresome job. Last fall I started out in the usual way—that is, with my left hand holding and balancing the frames of honey on a pin and crossbar over the melter, and with my right hand forcing the honey-knife down through the thick sides of the combs of honey. I soon realized that the strain on my wrist and right-hand thumb would soon put me out of commission. It was then the thought came to me, why not make a frame-holding device to hold the frames of honey while being uncapped, and thus leave both hands free to operate the knife?

Accordingly I took a piece of board slightly wider than a Hoffman frame and not quite so long, to which I nailed a strip on each edge, allowing these strips to project about half an inch. This formed a shallow trough for holding the frames of honey. On the bottom of this trough I nailed a wider and heavier strip to support the frames of honey and to act as a stop for the knife. This device I fastened securely over the melter on a supporting bar of wood about an inch square, close to the front, and at an angle convenient for working. The top is tilted back somewhat so that the frames of honey will not fall out, but lie securely in the holder. This at once proved its superiority over the old-style cross-bar and pin method, as it not only holds the frame of honey more solidly but leaves both hands free to operate the honey-knife.



Frame-holding device mounted on the capping melter in such a position that both hands are free to handle the uncapping knife.

Next I took the honey-knife to the forge and straigthened out the shank (I never could see any sense to that crook anyway). Having on hand a piece of a pitchfork handle about a foot long, I sawed a slot in one end, slipped the straightened shank of the knife in it, and riveted together. This looks more like a spear than a honey knife, but, believe me, it is as far ahead of the old-style knife as day is of night. This long handle allows the use of both hands in grasping it and takes all the strain off the wrist and thumb of the right hand.



Comb in position in frame-holder. Note the long handle on the uncapping knife designed for both hands.

The right hand now principally guides the knife while the cutting strain or pushing strain is borne by the left hand in a natural position. The cutting stroke is either straight down or zig-zag, as the user pleases, and the knife is guided in and out of depressions much easier. The steam plate or cover soldered on the knife I made about ⅜ inch deep in order to turn the cappings down better. The regular steam knife is too thin, allowing the cappings to slip up over the knife and adhere to the honey again. This is especially true when uncapping thick combs of honey—the kind I like to work with and usually get by spacing frames nine to the super instead of ten.

Personally I can say that this device has made uncapping a pleasure rather than a drudgery and a dread as heretofore, and I would about as soon think of pitching on a load of hay by using only one hand on the fork handle as to attempt uncapping again by the old orthodox method.

Leroy F. Baxter.

Blair, Nebraska.

BEEKEEPING IN LOUISIANA

Rapid Increase in Honey Production and Package Business During Recent Years

The beekeeping industry in Louisiana has been improving very satisfactorily for the past ten years. Many new beekeepers have come and are continuing to come from the northern states, and the industry has developed extensively.

Although the honey crop for 1925 was short, being fifty per cent under the normal production, E. C. Davis, Specialist in Bee Culture of the Louisiana State University Extension Division, feels that beekeeping history was written in 1925 in that 236 beekeepers bettered conditions, 168 transferred colonies from the old home-made box hive to modern movable-frame hives, 600 pure-bred Italian queens were introduced into Louisiana colonies, and 166 boys and girls joined the bee clubs sponsored by the extension division.

Louisiana's pleasant and agreeable climatic conditions have attracted beekeepers, for Mr. Davis says that they are being consistently added to the industry. More than a dozen large commercial apiaries that handle both honey and package bees, have gone into the business extensively. One concern is rapidly building up to 10,000 colonies, while many of them reach from 500 to 2000 colonies.

The "package" business has grown until it is now so great that no breeder has been able to supply the demand during the shipping season. One breeder is supplying one of the largest mail order houses in the world with bees and queens. The package business this past year amounted to more than $50,000.

While the honey crop was below normal as an average last year, there were some localities that produced the regular crop, while in other parts the crop was an entire failure. There were several hundred honey producers whose crop ran around the twenty-five ton mark, which was under the previous year's crop.

During 1925 the Louisiana bee specialist told the story of the bee to school children, farmers, commercial and civic clubs from one end of the state to the other and won many converts to the honey business through these media. The total attendance at these meetings was 6768 and the total number of talks made was 122. In visiting the beekeepers in various parts of the state during the year, Mr. Davis estimates that he traveled 5593 miles by train, and 4628 by automobile—a grand total of 10,221 miles.

The Louisiana bee specialist expressed the belief that Louisiana's bee industry

will continue to grow and make even greater strides during the coming year than it did the last. More than 6000 new modern hives were added to Louisiana apiaries during 1925, and greater growth is predicted for 1926.

Baton Rouge, La. Herbert Dickson.

SWARMING WITH YOUNG QUEENS

Conditions Under Which Colonies with Young Queens Will Swarm in August

I learned over again last season that there is nothing infallible with bees. While my crop of comb honey was satisfactory, I found that in a season like that of last year quite a percentage of colonies having young queens will swarm when they become crowded. To get the greatest amount of comb honey finished, bees must become more or less crowded, and under normal conditions after the season has advanced beyond the main swarming season colonies with young queens will stand considerable crowding. Prolific queens, whether young or old, will keep the brood-nest so occupied that there is no place to put honey except in the supers, and here is a chance for the watchful eye; for if a good honey flow keeps up, ample room must be given or swarms will issue even in August. If the honey flow is less than two pounds per day, bees will not build combs in sections, and the honey crowds the brood-nest, which produces a poor condition for ever getting finished sections, as well as a very poor condition for winter.

Hyrum, Utah. M. A. Gill.

HIVE WITH TOP ENTRANCE

Supers Placed Below Brood-Chamber, a Let-Alone System

In Gleanings for December, 1923, there is an illustration and a short description of a hive with a top entrance, and no bottom entrance, entitled "A New Let-Alone System," which had been tried by A. W. Finlay, Huntingdon, B. C., and had been found so far a success. The writer has had several of these top entrances made at different times, and has given them to beekeepers in various parts of British Columbia, hoping that they would try this system and report results. Only Mr. Finlay, however, appears to have done so, and the following year, 1924, he reported good results. A further report from him has just come in (dated March, 1926), in which he says: "I have just been through my bees (about 40 colonies) and the best colony of all was the one with the top entrance as usual. There were only three frames of capped brood, but it seemed as though all last season's bees were present, as well as a lot of young ones, and the bottom story of the two full of honey, with the bees covering every frame to the bottom. I think it will be a worth-while test to put five top entrances on ten lots of package bees I am getting. This should give a fair chance for further comparison and some definite information."

This would appear to be an excellent system for out-apiaries in districts free from disease, as, if sufficient hive-bodies with built-out combs or full sheets of foundation are added below the brood-chamber, which is placed immediately below the top entrance in the spring, no further attention would be required until the honey is ready to be taken off at the close of the season, and there would be no swarming if young queens were provided. Mr. Finlay has had no swarm from this hive during the three years he has tried it, and a yield of honey equal to colonies with usual bottom entrances.

Victoria, B. C. W. J. Sheppard.

SUNLIGHT AFFECTS HONEY FLOW

This month demonstrated very markedly the value of sunlight in nectar production. Over three-fourths of the days in April were cloudy. The first fifteen days of May were cloudy, and on twelve of them rain fell. Honey plants were in bloom in great profusion, yet the hives showed a loss of weight. Much of this was due, of course, to the fact that the bees were kept at home by rain and cold. However, there were days during which the bees should have made a living. Investigation showed that the whole working force of many colonies was in the field, and yet very little nectar could be found within the hives. The bees were very busily engaged in collecting nectar from sweet clover, phacelia, gaillardia, and a host of other good honey plants. Many of these bees were captured and the contents of the honey stomachs examined. The amount of material obtained per stomach was normal, but the material contained no form of sugar. In other words, the lack of sunshine did not permit the plants to produce sugar, and the bees were simply collecting a sap made up of water and a small amount of lime compounds. The 16th of the month marked the beginning of clear weather, and by the 20th nectar was being stored in some quantities. The honey-stomach contents of bees collected from the same groups of plants on May 22 showed the normal percentage of sugar content.

San Antonio, Tex. H. B. Parks.

SIFTINGS

by J. E. Crane

"Certified Honey! This honey is pure and free from disease, while if you buy any other you may get a diseased or adulterated article." Well, how does it look? For one, I think it looks like pure selfishness, and in the same class as the adulteration of honey with some cheaper article. Yes, and selfishnes is at the bottom of most of our troubles—theft, robbery, burglary, and even murder. Let every beekepeer frown it down.

* * *

On pages 360 to 363 Mr. Jay Smith gives us some good advice as to how to produce choice queen-cells and queens. Perhaps no one is better qualified to instruct us along this line than Mr. Smith. We all like those large cells with outside ridged and cupped, as though the bees knew the great value of the germ within. We all like those large golden queens that such cells produce, too, but the fact that we have sometimes had small inferior-looking queens just as prolific as those large handsome ones would indicate that there is something besides size that determines the ability of a queen to lay eggs.

* * *

The description of "Bees at Chautauqua Audiences," by E. R. Root, commencing on page 365, is so vivid, so clear and interesting that I found myself quite excited at the close and wanfed the show to go on. Great good should come from these lectures, for they teach the exceedingly interesting nature of bees, the great value of honey as food, also the ease with which a person or crowd can be fooled by one who knows how.

* * *

I had been hoping that a solution of formalin and water might prove satisfactory for treating American foul brood, but the reports of some apiarists who have tried it have seemed to cast some doubt on the reliability of such treatment, and now P. R. Needham tells us on pages 367-369 from experiments he has made why this is so or why the alcohol solution is safer than the water solution. He has our thanks for his careful experiments and observations.

* * *

Mr. Needham tells us that the cappings over honey show under the microscope no openings, while the cappings over brood show several small openings. This was new to me and I can not help wondering if this is not a provision so air might enter the cell for the benefit of the larva. How many little things are looked after by nature that we are apt to overlook! We sometimes wonder if nature can think.

* * *

"Strong Colonies for Comb Honey," says E. S. Miller on pages 363-364, and he is quite right. But how strong colonies can be kept from swarming is still a problem with many beekeepers, for conditions most favorable for the production of section honey are usually most favorable for swarming. Some years the bees seem to have a mania for swarming, so that what will check it in one place or season does not work in another. Well, there seems to be no better way than to study carefully the different methods and choose the ones that work best in our own yards. Sometimes one way seems to work well with one colony while some other may prove better for another.

* * *

"Corn Sugar Bill Still Threatens Beekeeping," says the Editor of Gleanings on page 359. But it is comforting to know that the letters of protest from beekeepers throughout the country to their servants in Washington have driven the corn sugar legions from one position to another. Let the good work go on until they are driven from the field. If corn sugar is a good thing, let it stand on its own reputation and win an honorable name as honey has done.

* * *

Under "Bees, Men, and Things," page 390, Mrs. E. G. Norton, of Nevada, writes, "None of the beekeepers here intend to run for comb honey this season on account of the market being so slow." The market for comb honey here in the East has also been slow. After selling a number of tons of extracted honey in small packages we have had to buy several thousand pounds more to supply our customers.

* * *

We are apt to think the beekeepers of this country are pretty well organized, but Mr. Nolan informs us that in the German-speaking population of Switzerland their beekeepers' association had nearly 17,000 members in 1924. They also had 126 local societies. Moreover, this country supports three bee journals —one for each of the three languages spoken. Switzerland is just about one-third the size of the state of New York, and much of it is wild, lofty mountains producing more glaciers than honey.

FROM FOREIGN LANDS By W. J. NOLAN

The value of honey as a lubricant for areronautical machinery has been demonstrated by some conclusive experiments, according to L'Abeille for May.

The highest apiary in Europe is located at Arosa, Switzerland, with an elevation of 6175 feet, states Die Bayerische Biene for April.

A new bee journal, "Imkerboten," is reported from the Austrian Tyrol by Die Duetsche Bienenzucht in Theorie and Praxis for April.

In England, according to Bee Craft for May, the Ministry of Agriculture and Fisheries circularized fruit-growers this spring warning them of the dangers which might be caused to honeybees by spraying fruit trees in full bloom.

An article on the blood of the honeybee is given by Doctor Borchert in Die Biene und ihre Zucht for April. He reports that experiments by Dr. Kurt Müller, his co-worker, have shown no difference in the blood corpuscles of healthy adult bees and those sick from Nosema.

Native beehives in the territory of Tanganyka, Africa, are illustrated in the Bulletin de la Societe Romande d'Apiculture for May. These are commonly made of bark or hollowed-out wood, and are suspended at the end of the branches of some tree, commonly called the baobab, to keep them from being reached by the native honey-bears.

Mr. C. P. Dadant, in recognition of his long years of service to beekeepers throughout the world, has been elected an honorary member of the Societe Centrale d'Apiculture of France, according to L'Apiculteur for May.

In the United States the standard sizes of foundation for sale can be numbered on the fingers of one hand. In Germany, according to the Bienenwirtschaftliches Zentralblatt for March, during last year requests for foundation in over 400 different sizes were received by a certain firm.

A more accurate determination of the composition of honey according to the latest methods is the task of E. Elser, of Switzerland, states the Markische Bienen-Zeitung for March. Special attention will be given to the determination of the enzymes present.

According to L'Abeille for May, the orange trees, lemon trees, and perfumed plants of Greece furnish a honey much sought after everywhere. The total production is 10,560,000 pounds. The production of wax is about 1,100,000 pounds. A large part of the honey is exported, principally to England, Germany, and the United States.

A sixth edition of the book, "Der brasilianische Bienenzuchter," by Prof. Emilio Schenk, is announced in the Bienen-Vater for April. Professor Schenk has probably done as much as or more than any other man to introduce modern beekeeping methods into Brazil. Beekeepers who met him will recall with pleasure his visit to the United States in 1920.

Data concerning honey and wax importations of Switzerland are given by J. Magnenat in the Bulletin de la Societe Romande d'Apiculture for May. In 1925 about $150,000 worth of honey was imported. France furnished about one-third of the total; the United States, a little more than one-fifth; Chile, a little more than one-eighth; and Cuba, a little less than one-eighth. Notwithstanding last year's increased crop the importation was also greater than in 1924. Probably the larger share of the importation was made before the year's crop came on the market.

The results of a chemical analysis made by Alin Caillas of Russian honey 100 years old appears in the Bulletin de la Societe Romande d'Apiculture for May. He found 76.9 per cent of reducing sugars and only traces of sucrose. He is of the opinion that honey is in a state of constant chemical change, at least until all of the sucrose is broken down into dextrose and levulose. This time is not less than ten, nor more than one hundred years. Invertase is the cause, this being introduced from the honey-stomach of the bee.

At times extraordinary effects on man have been reported as resulting from a bee-sting. Such is the case of M. Edard in La Gazette Apicole for April. This beekeeper happened to be stung at 7 p. m. over an artery in one of his temples. In about a minute, among other consequences, his heart began to beat violently, his hands seemed to swell stiff, while his breathing and hearing became affected. The attack seemed over in three minutes. He immediately went to bed, and on getting up in the morning was all right again.

In a recent issue of the Archiv fur Bienenkunde, Doctor Phillips has published an article entitled, "A Source of Error in the Study of Diseases of Adult Bees." He advances the idea that in every abnormal loss of adult bees from

unknown causes the possibility of a physiological disturbance, due to something other than an infectious disease, should be given due attention first of all. He illustrates his point by the example of "spring dwindling" due to improper beekeeping methods.

A paper in 1925 by W. W. Alpatov showing a progressive diminution in the tongue of the honeybee from south to north in Russia was mentioned in Gleanings on page 230. No definite explanation was given in the paper for the facts set forth. The findings, however, are in accord with those presented recently in the Archiv fur Bienenkunde by A. S. Mikhailoff, of the Tula Experimental Apicultural Station in Russia, to supplement a paper by himself in 1924 on the same subject. It is his idea that the shorter tongue length in the north is to be correlated with the greater abundance of nectar found in northern regions than in southern regions, as was set forth by the French botanist, Bonnier. In the south, Mikhailoff maintains, the longer tongued bees would have an advantage over shorter tongued rivals by being able to gather nectar from flowers inaccessible to the latter. This would be a decided advantage during the season when only a scanty supply of nectar is available.

Germany before the war imported yearly $5,000,000 worth of wax and wax substitutes, says Doctor Zander in Die Bayerische Biene for April. In speaking of the food value of honey he states that in certain medical cases the use of honey has been followed by an increase of between 25 and 30 per cent in the red coloring material of the blood, the haemoglobin, while it is also of value for children weak and deficient in respect to blood, for constipation, for certain heart troubles, and for catarrh. Before the war the German consumption of honey was estimated at 37,400,000 pounds yearly. In Germany at present there are 93 manufacturers of artificial "honey." In speaking of the use of the honeybee in pollination, Doctor Zander holds that in his country between 80 and 90 per cent of the fruit crop must be credited to the efforts of the honeybee.

The University of Zurich recently bestowed on the well-known Swiss apiculturist, F. Leuenberger, an honorary doctor's degree in recognition of his valuable work for the advancement of apiculture in his country during the past fifty years. Two other outstanding beekeepers have been thus honored. The first was Doctor Kramer, also of Switzerland, who in 1908 was granted an honorary doctor's degree by the University of Berne for his noteworthy work in promoting breeding work on the honeybee in Switzerland. The other was the late Doctor Gerstung, whose apicultural endeavors were similarly rewarded by the University of Jena a few years ago. Doctor Leuenberger is known outside of Switzerland as editor of the Schweizerische Bienenzeitung, as a writer on bee diseases and other topics, and for his work as chief of the bee disease insurance section of the association of German-speaking beekeepers in his country. His achievements in the field of apiculture, and his services to Swiss beekeepers in particular, are well summed up by Dr. E. Rotschy in the May issue of the Bulletin de la Societe d'Apiculture.

An interesting paper dealing with new experiments on the part played both by the scent glands and pollen odor as a means of communication in a colony has just been published by Doctors von Frisch and Rosch in the Zeitschrift fur vergleichende Physiologie. In work published two or three years ago, von Frisch had already established the fact that the discoverers of an artificial source of nectar impregnate the locality with the odor from their scent glands, thus enabling other bees to find it, which, after becoming excited by the characteristic "dance" executed by the discoverers on their return to the hive, rush out in search of similar treasure. In this new paper is presented data showing definitely that the same use is made of the scent glands in the case of the discovery of a sufficiently large natural supply of nectar or pollen. Furthermore, the odor of one colony does not seem to attract searchers from another colony to a source of newly found nectar or pollen. Although the "dance" characteristic of a pollen-gatherer is different from that of a nectar-gatherer, the two investigators found specific evidence that not the form of the dance, but the odor of the pollen or blossoms causes the bees to rush forth excitedly for pollen or nectar as the case may be. This was demonstrated by marking some nectar-gatherers and pollen-gatherers from a special observation-hive, the former gathering sugar syrup from a locality under observation and the latter gathering pollen from rose blossoms placed elsewhere. These blossoms were removed, and in one instance pollen was dusted onto the marked pollen-gatherers. In another test pollen-loads from an ordinary pollen-gatherer were glued to the pollen-baskets of a nectar-gatherer. In both the foregoing cases the nectar-gatherers on returning to the hive executed typical nectar-dances, but the marked pollen-gatherers, obtaining the scent of the pollen, rushed out to the spot where a short time before they had been finding pollen.

FROM NORTH, EAST, WEST AND SOUTH

In Southern California—Honey has been coming in and extracting going steadily on in southern California since our last report. The orange gradually stopped yielding and the beekeepers got busy and moved to the sages and wild buckwheat ranges. Some few beekeepers ran through the orange flow for increase and now (June 4) are practically all off for their northern or summer ranges. Several have signified their intention of "not coming back," but—well, we have heard that every year for a long time, and some way we see the same faces back again next year. If it pays well, stay with it, boys.

Generally speaking, the season is going along very satisfactorily. Up to date, beekeepers have taken off from 30 to 70 pounds per colony and estimate the crop at from one to two cans per colony, which would make a good average. Considering our very unfavorable outlook April 1st this is phenomenal. Always be ready and you will win in the end.

We live about fifty-one miles southeast of Los Angeles, and on a recent trip to the city could not help noticing the wonderful array of bloom as we drove through the Santa Ana canyon. The road winds along the river, and on either side the mountains rise and are covered with many kinds of grasses, flowers, trees, and shrubs. More particularly did we notice the black sage. This bush has made a fine growth and is a great attraction to the bees. Much of the land along the river is still held in large tracts, never having been sub-divided since given to the Spanish Grandees while still Mexican Territory.

Markets on honey are not at all encouraging. Some sales have been made, but there seem to be no established prices. These will be very materially affected by the crops north and east. More honey is being sold locally than ever before. Thousands of roadside stands and produce-peddlers are selling honey. Consistent steady advertising of the merits and value of honey as a steady diet would in a comparatively short time bring a demand beyond our ability to fill.

Beeswax is in good demand at very satisfactory prices. The demand for foundation, coming on as it did very suddenly after the April rains, made a big demand for wax.

After some thirteen years, the Consolidated Honey Producers' Association of California has disincorporated. During these years the association has owned and published "The Western Honey Bee." Not having an editor, newspaperman, or any one willing to take the responsibility of running the paper it was thought best to dispose of it. Miss Helen Weightman, 2823 East Fourth St., Los Angeles, together with several others, made an offer which was acceptable, and the paper was turned over to them.

We feel that the paper is in good hands and that the new owners will give to the beekeepers of the West a paper that will be especially beneficial to them.

Corona, Calif. L. L. Andrews.

* * *

In Utah—There was not the usual amount of winter moisture in Utah, and there was quite an extended drouth during April, which curtailed plant growth. Heavy rains the fore part of May brought on a rapid growth of plants. This was followed by sunny weather, but with a cool north breeze for a month, which was very unfavorable for the secretion of nectar; but as pollen was plentiful, breeding was kept up while the stores lasted. At this date (June 4) the colonies are not in as good condition as they were last year at this time.

One of my apiaries of one hundred and twenty colonies that had an abundance of honey was increased to one hundred and eighty during the month of May, while a yard a few miles away had to be fed and the bees are now killing off their drones.

Alfalfa is a sun-worshipper and the cool north air was unfavorable for its proper blooming. As haying-time has now come, farmers are cutting, so it looks as though the honey from the first crop of alfalfa will be nil.

On account of the lack of deep moisture, without timely rains sweet clover on unwatered lands will soon dry up; but if we get enough to put our bees in good condition by July 10, we can yet secure a crop of honey, for much of the second crop will be left for seed, which extends the bloom greatly.

We had hoped that Utah was rid of the alfalfa weevil, but it has again appeared farther south in the state and is doing much damage. But on the whole Utah fruit, vegetables, and, in fact, all farm crops have not looked better in years. While "hope deferred maketh the heart sick," yet, as you know, bee-men belong to the hopeful class, so we still expect to get a honey crop.

There is about one-half a carload of honey here yet unsold, and but little local demand. Why is it that, when some articles are plentiful and cheap, people don't buy and consume as they do when the articles are scarce and higher in price? It seems to me that eggs taste a little better when they are 75 cents a dozen than when they are 20 cents.

Hyrum, Utah. M. A. Gill.

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In Oregon—As reported in the May issue of Gleanings, the honey flora is exceptionally early this year, averaging probably some two weeks earlier than is usual. The few reports which come into this office indicate that the honey crop is exceptionally promising this year.

Judging from the number of complaints which have come to the writer this year relative to disease, it would seem that disease, especially European, is far less common than usual.

Beekeepers should keep in mind the State Fair and also the Livestock Show when extracting honey or taking off comb honey. Everything possible should be done to boost both of these larger fairs. In many cases the honey can be exhibited both at the larger fairs and at some local fair, thereby getting additional advertising with very little extra effort. The bee and honey department at the state fair this year will be in charge of William Schulmerich, of Hillsboro, to whom all correspondence should be addressed.

Again I wish to remind beekeepers of the state of the importance of planning to attend the next beekeepers' meeting which will be held at Dallas, Oregon, December 2, 3, and 4.

The honey market in this locality is weak, but retail prices remain about the same. H. A. Scullen.

Corvallis, Oregon.

* * *

In Texas—May failed to bring the usual honey flow to southwest Texas. The first crop is generally taken between April 20 and May 15, while the second extracting is between May 15 and June 20. Reports have come in of a few favored spots where beekeepers have been able to extract, but no high averages have been reported. The honey flow was cut short by the arrival of a fresh norther and the newly deposited honey was left unsealed. As a result there will be little bulk comb honey for early sale. Cold wet weather, rains, and hail storms seem to show a preference for those localities where many apiaries are located. One very destructive storm ranged for a hundred miles through the beekeeping section of northeast Texas, and did great damage to the bees. Just at present a very hopeful note is found in all letters coming from beekeepers. Horsemint is beginning to yield and the bees are again storing a surplus, with the horsemint in good condition and two or three weeks yet to go.

This season has been so peculiar that it is impossible to tell just what the horsemint flow will amount to. The beekeepers of the state are wondering what this erratic plant will do. Last year, true to form, it gave a fine flow of nectar when a wet period was followed by an extreme drouth. The past three months have been wet enough for anyone. The mesquite trees have shown no sign of blossoming and have made a wonderful vegetative growth. Will the mesquite live up to its old specific name of *juliflora* and bloom in July? This was the original name given to the tree by an early botanist who found the tree in abundant blossom during that month. Tradition of heavy honey flows from mesquite in July are quite prevalent among the beekeepers.

The annual meeting of the Texas Beekeepers' Association will be held the first week in August at the short course given by the A. and M. College of Texas at College Station. This meeting is for the benefit of the beekeepers, and everyone interested in bees is urged to attend. Anyone desiring information relative to the meeting can secure it by writing to the Apicultural Laboratory, Route E, Box 368, San Antonio, Texas. Dr. Bilsing, of the college, who is chairman of the program committee, promises an instructive program and an enjoyable time to all who will attend.

Systems of beekeeping practice that have been worked out on analogy to a higher organism often bring about sorrowful results. A beekeeper was told by his friends that his stock had run out because he had not requeened for a number of years, and this explained why his colonies were not storing honey. They advised him to kill his old queens and to requeen in nine days. Just what the big idea was in the time interval was not reported, but this beekeeper, as a result, has a number of queenless colonies and some second-hand equipment for sale. Another man owning bees was told by corner grocery beekeepers that in order to get the largest crops of honey he must take all the stores away from his bees so that they would have to get out and hustle for a living. Well, they got out and hustled and another bee-owner failed to become a beekeeper. These, of course, are extreme cases, but they have occurred within the past three months. To obviate the repetition of such occurrences and to

aid our many new beekeepers, be generous in loaning your beekeeping literature, and be ready to tell new beekeepers where they can get reliable information, standard bee fixtures, and queens that are of improved stock.

San Antonio, Tex. H. B. Parks.

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In Manitoba—The shipping season for package bees is now practically over for this year, and has been heavier than ever and fairly satisfactory. The failures, however, are the most discussed subjects among those interested in bee work, as everyone keeping bees is interested whether he buys packages or not. The shipment of bees on candy is practically over for us here, if we are allowed to have anything to say in the matter, as nearly every shipment sent on candy arrived dead or nearly so.

Very few shippers now use candy, but a few have insisted and their names will have to be taken from our list. One shipment, which the receiver refused as every bee was dead, still lies on the truck which it has occupied for nearly a month and is not very good advertising for the breeder who shipped it. I happened to be at the customs on the morning that it arrived and every bee was dead, including all the queens in the cages. The bees were not lying in a pile in the bottom of the cage, but hung in little groups over the wire, like the bees that have starved in a cellar-wintered colony. They appeared to have died from starvation, although the candy was still soft. Later the replacement arrived with 75 per cent of the bees dead, much to the disappointment of the receiver.

I have failed to locate one good shipment on candy this season, while thousands have arrived in perfect condition on sugar syrup. One buyer has received over 500 packages with a loss of ten. The big shipments arrived earlier than usual, most of them coming in late April, although some have arrived every day in the month of May. It is well for us that the deliveries have generally been good, as the winter was unusually long and the death rate heavier than usual.

One of the large shippers of bees in the South who has advertised extensively has given a severe blow to the plan of killing the bees in the fall and buying packages in the spring. Last fall one operator extracted all his honey, stacked up his hives, and went to California. He placed an order for next season and forwarded $850 in the month of January. He returned from California in mid-April and prepared for the season's work. The bees were to arrive around April 20. On this date, June 1, the early bloom is pretty well over and dandelions yielding plenty of nectar, but only ten packages have arrived. Another party sent $480 to the same firm and has received only twenty-five packages. Next fall there will probably be some cellars dug here, even if it does take a lot of work. A number of small orders from this firm are arriving every few days, but where the first-mentioned men are devoting all their time to bee work they are practically out of business for the season. However, in these columns in the past buyers have been warned that the lowest-priced man is not always the most reliable, and it is plain that the low price quoted caught these orders and proved more expensive in the long run. L. T. Floyd.

Winnipeg, Can.

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In Minnesota—Minnesota had a most peculiar spring from the beekeepers' standpoint. Parts of the state, particularly the Red River Valley, had an abundance of rain, whereas the country around the Twin Cities broke all records for drought during April and May. At Lake Minnetonka no rain has fallen for eight weeks. As a result, there was hardly any dandelion and the bees had to be fed after the fruit bloom to enable them to build up. White clover appeared to be completely killed, but it revived to some extent in spots where some rain has fallen. Basswood shows an abundance of buds, and, due to an excess of sunshine and hot weather, it will bloom at least two weeks ahead of the usual time. The honey crop will be spotted, but the total will be nowhere near that of last year. Northwestern Minnesota has the best prospects.

The winter losses were above the average throughout the state, owing to the presence of honeydew, which resulted in winter dwindling and dysentery. Losses were much heavier among those beekeepers who fed no sugar syrup last fall. I had three stacks of colonies in my bee cellar. One hundred and fifty were fed from 10 to 30 pounds of sugar syrup in addition to their natural stores, twenty were wintered on nothing but sugar syrup, and one hundred were wintered on their natural stores since they were considered too heavy in the fall to be fed. Of the first lot none died in the cellar, but they began spotting in March and came out rather weak, and ten died in April after they were taken out. Of the second lot none died. They were quiet and clean and they built up quickly in April and May. Of the third lot 22 died. The spotting began early in February and they are at this writing on an average the weakest of the three lots. The experiment of fall feeding with inverted

sugar syrup has been made in Minnesota more than a dozen times with the same results.

Very favorable reports are coming in from beekeepers using food-chambers on top during the breeding-season in the spring. This results in very strong colonies for the honey flow.

The beekeepers' short course, given at University Farm, St. Paul, May 18 to 21, was well attended. There were hardly any "new" beginners present, the students being mostly actual beekeepers wishing to learn better beekeeping. This is quite encouraging.

The Hennepin County Beekeepers' Association met May 19 at the home of Mrs. McGuire at Hopkins. The weather was delightful and so was the lunch. The proper time and method for supering in the spring was the topic discussed.

Mr. W. S. Harris, a Minneapolis banker with beekeeping as a hobby, is now making beekeeping his principal business, and has started a modern bee-yard at Crosby, Minn., with new hives and package bees from the South.

Mr. Simon Kruse, proprietor of the two-million-dollar Radisson Hotel in Minneapolis, spends one day a week at his splendid apiary of 75 colonies near Anoka, Minnesota. Some of the greatest business men of the Twin Cities keep a few colonies at their summer homes.

Mr. D. M. T. Morland, of the Rothamsted Experiment Station, England, spent four days in Minnesota visiting our experiment station and the apiaries of Father Jager, Dr. Leonard, and E. L. Hoffman.

Minnesota has done its share in protesting against the "corn sugar" bill in Congress. A vote of thanks is due to Mr. Geo. S. Demuth for the courageous stand he took in the interest of all beekeepers. Francis Jager.

St. Paul, Minn.

* * *

In Arizona—The past month has been very favorable for extracting. The honey flow on the lower Gila River was short, with very little of the high-grade white and water-white honey secured. Some beekeepers report a very small crop, while in other sections it will be normal or a little above the average. More surplus was secured from wild flowers this year than usual, though it is very dark in color. At present it doesn't look as though there would be very much white and water-white mesquite and catsclaw honey secured, because so many wild flowers were in bloom at the same time the mesquite was in bloom. No offers or sales made to date.

In some localities extracting will continue for perhaps 30 days more, and if any high-grade honey is secured it will be the last secured. A large per cent of the crop this year will perhaps go to bakeries, and there will likely be a good demand for white and water-white honey.

If rains continue through July and August there is some prospect for a fall honey flow, though this occurs very seldom in Arizona. L. Wedgworth.

Oracle, Arizona.

* * *

In North Carolina—Many beekeepers in eastern Carolina are already taking new comb honey, and some are extracting. The size of the crop in the eastern end of the state, which is always much earlier than central and western Carolina, is problematical. Many beekeepers report their yields considerably cut off by drought and other unfavorable climatic conditions, and insist that the output will be short this season. They believe that the gallberry honey flow was especially curtailed by the exceptionally dry weather and failed to yield its usual abundance of nectar. The short yield followed heavy spring losses, making the net results for the season especially meager.

On the other hand, there are other beekeepers who report fine work by their bees and heavy yields of honey, which is now being taken. The Lower Cape Fear Apiaries (my own yards) had considerable fully capped new comb honey as early as the last week in April, enough being taken for considerable shipments April 27. All through the season the bees worked with remarkable "contentment," manifesting a minimum inclination to swarm or hesitate in work in the supers.

It seems now that central and western Carolina may be especially hard hit by short honey yields, due largely to unseasonably cold weather through the spring and a protracted drought during the past few weeks. However, with warmer weather and the drought already somewhat broken, these sections, especially the west, may come in for nearly normal yields as the bees have probably built up fairly well in readiness for the sourwood honey flow.

In eastern Carolina the new comb honey, especially the "section" honey, is beginning to come to the local market, and the prices are very satisfactory to the producers—in fact, they are getting their own prices for their product. Unfortunately there are, as usual, some "price-cutters" who don't seem to be able to realize the production cost and real market value of their product.

Wilmington, N. C. W. J. Martin.

In Northern Indiana—Cellar-wintered bees in northwestern Indiana came through in fairly good condition with few losses. Among those wintered outside, the winter and spring losses will approximate 50 per cent.

There is very little white clover in sight. Ample rainfall, however, should insure a supply of nectar in what clover there is. Alsike and sweet clover seem to be showing up well.

Small beekeepers in this locality succeeded in selling out their crop several months ago, and therefore are not interested in marketing at the present time. Commercial producers still have probably 10 per cent of their crop to hold over, although some, through roadside selling, have been able to close out.

Fewer bees than formerly are kept in this locality. Rapid industrial development in the Calumet region, with attendant high wages, affords more profitable occupation than beekeeping. The low price of honey and the difficulty of marketing are also discouraging commercial production.

American foul brood is being slowly but surely eradicated. This is due to the efficient service of our state inspection department and to the better understanding on the part of the larger beekeepers as to the nature of the disease and its mode of treatment. We have not found it necessary or advisable to burn all diseased colonies, as advocated by some writers. In our own experience we find that frequent inspection by the beekeeper and prompt treatment are essential to success. Once-a-year inspection doesn't amount to much. E. S. Miller.

Valparaiso, Ind.

* * *

In Western Ohio—Today, June 1, the weather is fine, the temperature being somewhat above normal. There is enough moisture to insure a luxurious growth of all honey plants, although we do not expect a normal crop from clover as the lack of rain last season, together with a severe drouth which lasted through the entire season, killed most of the clovers except the sweet clover, which will withstand quite a severe drouth.

We have 10 apiaries widely distributed through this section in Allen, Putman, Van Wert, Mercer, and Auglaize counties, and we notice quite a variation in the prospects for a honey crop. Some fields of alsike are looking well. Basswood also looks promising and we are hoping for normal weather conditions during the clover and basswood bloom, which should insure us at least some surplus honey.

The early honey flow from fruit and dandelions was the best we have had in years. Strong colonies have stored from 35 to 50 pounds from these sources, which gave the bees a wonderful boom. I have never seen bees in better condition for the honey flow than they are now. This early honey flow has been a great help to the bees and beekeepers, since it will do away with all spring feeding. It came at a time when the old stores were nearly all consumed. Queen-rearing is coming along finely, and queen-breeders are reporting many orders for early queens.

One of our largest beekeepers received 800 packages of two pounds each from Alabama, and doubled them to four pounds per hive. We were permitted to see these colonies recently when they had eight to nine frames of brood.

The Tri-County Beekeepers' Association meets the second Tuesday of each month with a good attendance. New officers have recently been elected. Chas. Polling, of Van Wert, is the new president, and Michael Schmitt is the secretary-treasurer. This live association with a membership of 30 beekeepers is looking forward to an active season this coming year. Nearly all are expecting to motor to Medina, Ohio, in September, for the annual field meeting of the State Association.

Delphos, Ohio. Fred Leininger.

* * *

In New York—On August 1 I shall have completed seven years and seven months in the extension service. On that day I shall enter the commercial field for the first time, taking charge of honey sales for the Herschel-Jones Marketing Service, Inc., at 97 Warren St., New York city. Were I leaving beekeeping, I should not be very happy about making the change, but I relish the idea of taking a plunge into the industry's greatest problem. The marketing of honey challenges the best that is in us all, beekeepers, editors of bee journals, and the folks in bee work at Washington and in the various state colleges, for it is a problem that is a long way from being solved. But enough of that.

Recent rains have improved immensely the outlook for a crop from white clover. The weather bureau reports May, 1926, as the driest May on record for New York, and since there is a direct correlation between May rainfall and June nectar from clover, we here were getting worried.

The bees that survived the winter and cold spring have started to come strong nicely. But these colonies probably do not exceed 65 per cent of the colonies that were prepared for winter last fall.

Even where the best of care was taken, winter losses have been exceedingly heavy. Whoever thinks that we know all we need to know about how to winter bees is sadly mistaken, and will be quickly enough disillusioned if he can be disillusioned, by making inquiry of almost any successful honey producer in the white clover region. It is greatly to the credit of Wisconsin and other western states that they realize our lack of understanding of how properly to winter bees, and are still hard at work on this problem.

The last week in May saw the first carload of buckwheat honey leave New York for Amsterdam, Holland, as a result of the co-operative project carried on by Messrs. Clay and Purdon, of the Federal Government, Herschel Jones, our New York marketing association, and, to a very limited extent, the writer. As a result of that work the tables are now somewhat reversed in respect to marketing our buckwheat honey abroad. Formerly we sold it only when, for lack of supply, they were forced to seek us. Now, thanks especially to Messrs. Clay and Purdon, we have contacts in many places in Europe through which we can readily keep our buckwheat honey before the trade whenever it is available.

This is the first year in many that buckwheat honey is being carried over in large quantities. The price, of course, has dropped to an unmentionable level and only a short crop here, or a failure of the European crop, can strengthen the market sufficiently to restore 1924 prices. A heavy buckwheat honey crop in New York this season is not to be hoped for.

Ithaca, N. Y. R. B. Willson.

* * *

In Ontario—Weather conditions in central Ontario have continued cool for this season of the year. Strong and medium colonies have built up fairly well, but all weak ones have not held their own. Owing to so much cool weather during fruit and dandelion bloom, little nectar has been gathered from those sources in many districts. At our Binbrook apiaries nearly all colonies have sufficient stores, while here at home in York County most of our bees are very light in stores and many will have to be fed between fruit bloom and clover. Clover prospects with us in York County are extremely poor, and we look for little in the way of a crop of white honey.

Honey markets continue dull and quite a quantity of last year's crop is still on hand, I understand, although most of it may move in the next few weeks before the new crop comes on the market.

Generally speaking, prospects are not as good as usual for all the Province in so far as reports received would indicate. This adverse condition applies to the bees as well as the honey flora. But, after all, sometimes we are surprised in more than one way in the apiary game, so prophecies as to final outcome for the season would be futile.

Remarks in the June Gleanings as to the mix-up in package business this spring simply confirm what many of us have thought and said, when differing with those who are so optimistic over package bees—so much so that some advocate destroying old colonies in the fall and buying fresh stock from the South each spring. Package bees will continue to have their place, as they are ideal for building up weak or queenless colonies in the spring. If they arrive in good condition, and if the weather is favorable after they are received, and if the queens are all right, then two-pound packages will in some cases equal well-wintered colonies if placed on combs and given no other help. But the trouble is that so many "ifs" complicate the situation, and one cog missing queers the whole machine. Of course, a very important "if" consists in being able to have bees arrive when wanted, and that is the factor that played havoc this spring, for in but few cases were bees received at dates they had been ordered.

We received a number of packages to make up for winter losses and to place in queenless colonies. As usual, we are having quite a lot of queens fail shortly after bees are in hives. Just yesterday we found two packages at one yard badly dwindled, with queen on the job but laying very little, and sealed queen-cells present in each case. No question but that many queens are reared under poor weather conditions in early spring, and I expect that we will always pay that penalty when buying package bees, as we can not control the weather even in the sunny South.

As to winter losses over the Province, latest reports place it at fully 25 per cent, I believe. As stated in last Gleanings, our actual loss is not nearly that much in so far as our own yards are concerned, but colony condition as a whole is away below par. At one yard we were not able to clip queens before June 10, although we had visited it before to see that all were in good shape. To our surprise we found about half of them with cells started and three had already swarmed. As queens happened to be clipped, bees were still there. Three miles away another apiary of ours is actually near starving. The difference is a matter of location even in that short distance. J. L. Byer.

Markham, Ontario.

HEADS OF GRAIN FROM DIFFERENT FIELDS

Erroneous Ideas Regarding Honey The idea that honey may cause disease has spread to an alarming extent among the people in many parts of the United States. I have had for the past fifteen years a limited trade in extracted honey in 5-pound and 10-pound pails, and 60-pound cans by parcel post, sending it to customers in many different states. Through these customers I am coming in contact with the idea that honey may be diseased. My trade is actually dropping off through this impression. The public gets this impression through items in the press in which there are references to diseased honey—more or less inaccurate, of course, but the public does not know this. A. G. Hann.

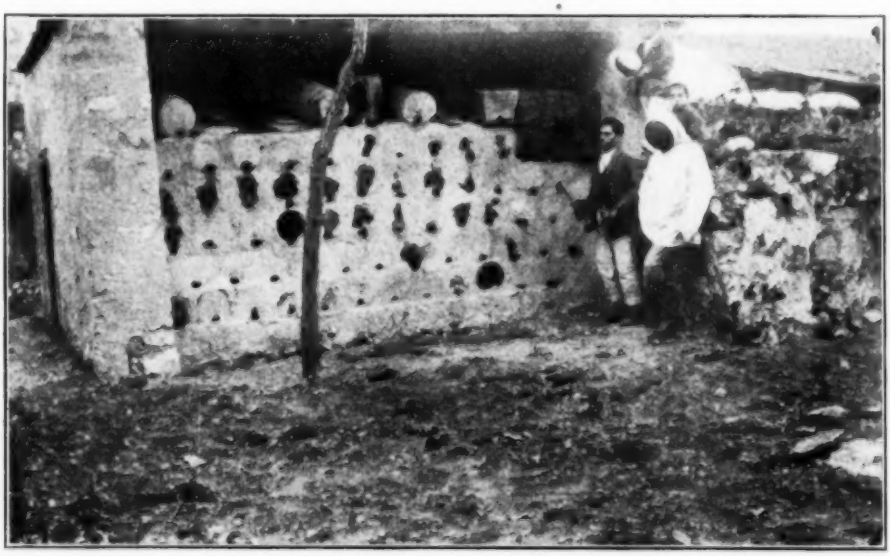
Glen Gardner, N. J.

Rearing Queen Above Excluder I work my bees for extracted honey, and when the brood-nest begins to get a little crowded I put the brood above, which relieves the crowded condition. In about ten days I examine the colonies again, when I sometimes find some very nice queen-cells above, which I put in the top super, an excluder being above brood-chamber. I then either bore a little hole in top super or twist it enough to one side for a queen to get out and mate. After the young queen has mated, I pinch the old queen and place the new one below, where she is always accepted. I never keep a queen more than two years. Lester N. Smalley.

Rock Stream, N. Y.

Prevention of Absconding Nothing is more disappointing to a beekeeper than to hive a nice swarm of bees and then find it has deserted the hive shortly after hiving. My method of preventing this (I do not claim to be the originator of the system) is to set a queen-excluder under the hive-body after the queen has been shaken into the hive. If ventilation is necessary other than that afforded by the large hive entrance, I usually put blocks under each corner between the bottom-board and the hive-body to give ventilation on all sides. This system can be used on bees taken from bee trees, shaken foul-brood colonies, package bees, or swarms. I have tried it in each of the above cases with entire satisfaction. I usually remove the queen-excluder after the new hive has been accepted and brood has been started in the frames, not before. This system might fail if a swarm headed by a virgin queen is hived in the manner described.

Coldwater, N. Y. R. E. Newell.



An apiary in Cyprus. The hives are made up of clay moulded into hollow cylinders. These are placed in a horizontal position in tiers, thus making a solid wall of hives.

Strong Colonies in The A. I. Root Co. Experimental Apiaries

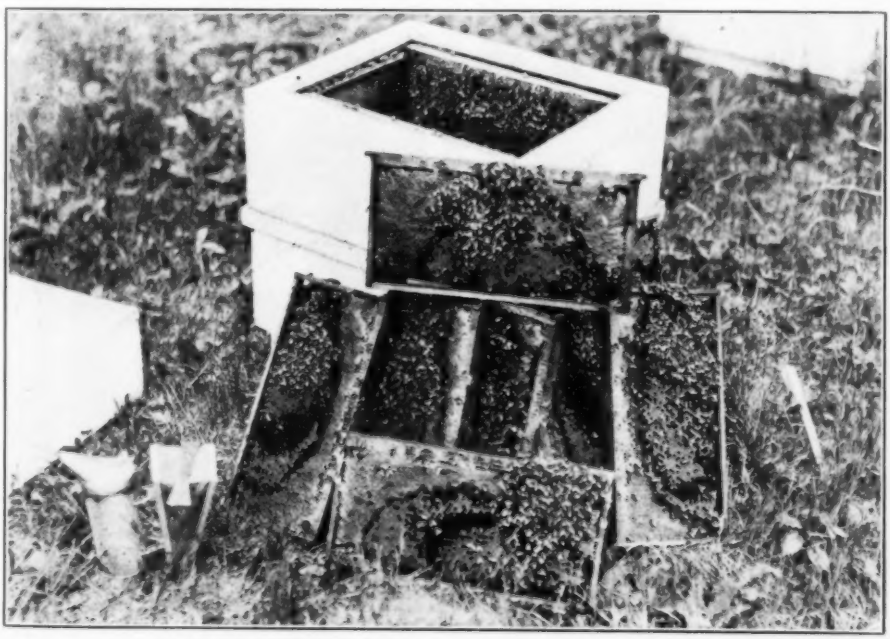
The photograph shows one of our colonies in a double-walled hive with deep or standard food-chamber with packed rim. A young prolific queen was introduced to this colony the last week of July, 1925. A deep super filled with well-ripened honey was left on the hive during late summer, fall, winter, and spring months. During the fall honey flow a super of empty combs was placed under this deep super of honey (food-chamber) to catch the fall honey flow. Then during late September, at the close of the fall honey flow the super last put on was removed, together with the queen-excluder, which had been directly above the brood-chamber during summer and fall. The deep food-chamber jammed full of honey was then placed on the brood-chamber, the deep packed rim for the food-chamber put in place, after which the chaff tray well filled with planer shavings and the telescope cover were put on for winter. The hive was tilted slightly forward to drain off any moisture that might accumulate during the winter and the hive entrance was reduced to 1½"x¾". On May 17 the colony had brood in 13 combs, eight above and five below. On May 25 it had brood in 16 combs, eight in the food-chamber and eight in the brood-chamber. At that time the hive contained about 25 pounds of honey, none too much, because we have had some cool rainy weather since.

Medina, Ohio. M. J. Deyell.

To Prevent Pollen in Sections

In nearly all instructions for hiving swarms where queens are clipped, the advice is to remove the old hive and replace with a new hive in the exact location of the old one. Then immediately remove the supers from the old hive and transfer them to the new. Now this will not hold good where the new hive contains only frames with full sheets of foundation. I tried it to my sorrow several times during the last two years. The first bees that come in laden with pollen, not finding any place to store it in the brood-chamber, hike above with the load and spoil a good many sections. In one instance the queen went above and laid in five or six of the boxes. Since learning this I have waited about 24 hours or till the next day at least before transferring the supers and have not had any more trouble. I have not seen where anyone advocated waiting any time at all. Perhaps my trouble is not common, but it happened nearly every time with me when I transferred at once. If I put one comb below, with the rest full sheets, it prevented it also.

Sargent, Neb. H. I. Perrin.



This colony had brood in 16 combs on May 25. The eight which were taken out of the upper story to photograph contained less brood than those below on account of the sealed honey in the upper portion.

SOME JULY HONEY PLANTS

Upper left, blue vervain. Upper right, alfalfa. Lower left, basswood. Lower right, milkweed.

BEES, MEN AND THINGS
(You may find it here)

"This is a most discouraging season. While clover was in good condition last fall, the cold, dry spring has almost eliminated it and the prospects are for a crop only 20 per cent of normal, if that much. To get that, we shall have to have extra-good weather since there is nothing in sight to get it from. However, there is a good acreage of buckwheat being planted, and we will build our hopes on that."—Harry W. Beaver, Bradford County, Pa.

"I have kept bees in seven different states, but last March here was the worst for the bees that I have ever gone through."—W. L. Dutton, Ware County, Ga.

"The beekeeping industry in this state has been hard hit. The bees wintered on honeydew honey and I think at least 75 per cent of the colonies of the state have not survived the winter on account of poor stores. A number of people who had ten or twelve colonies have lost them all."—J. R. Hepler, Strafford County, N. H.

"Our bees wintered well in two-story hives packed in paper and shavings, as has been illustrated in Gleanings in Bee Culture. Our colonies at this time have as high as 12 to 14 frames of brood."—A. W. Mason, Genesee County, N. Y.

"We have a late dry spring and I do not think we will have much clover here, so I am afraid our honey crop will be light this year."—W. S. Smithey, Monroe County, Mo.

"If I could render a service to beekeepers equal in value to all that I have learned about bees in the past three years from your writings and those of the lovable Mr. Crane, the more stern Mr. Byer, and the analytical Mr. Pettit—yea, even "Old Drone"—I shall be glad."—C. F. Porteous, Allegheny County, Pa.

"My winter loss was chiefly among the purest and brightest Italians, there being practically no loss of colonies that show even a slight trace of black blood."—W. L. Spink, Wyoming County, N. Y.

"I have installed a complete outfit for disinfecting diseased combs on a large scale, not that I am particularly anxious for the job, but because I feel it is what is needed in every locality in order to keep down the disease. Since putting in the equipment I have treated combs for others besides several hundred of my own."—C. J. Morrison, St. Joseph County, Ind.

"The Tri-County Beekeepers' Association has provided a fund for fire and theft insurance for its members in order to afford greater protection."—Fred Leininger, Allen County, Ohio.

"So far the honey flow has been almost a failure. I can not explain why the mesquite yielded so little. Alfalfa is in bloom, but there is little nectar in it."—B. A. Hadsell, Maricopa County, Ariz.

"The writers tell us to trade positions of hives of the colony being robbed and the one that is doing the robbing, but they fail to state that the robbers will then proceed to kill off all the bees in the hive they have been robbing but which is now their new home. That was my experience. Even the queen was killed."—Lewis S. Gillespie, Wirt County, W. Va.

"I have been producing honey only a few years, but have stuck closely to your advice not to cut prices. I find one does not sell a single pound more by underselling a reasonable price."—Mrs. Fannie Calvert, Chase County, Kans.

"I have noticed that a clean hive and clean equipment are great factors in keeping down the amount of propolis. Hands or gloves that have been used around the car or the stables should be clean before handling frames. We can't blame the bees for plastering fragrant gum over a smear of oil or a spot made objectionable by other foreign matter. Their sense of smell is keen, and a little co-operation on our part will reduce the sticky nuisance."—W. R. Haughwout, Monroe County, N. Y.

"I have a few sets of brood combs from colonies that were queenless last season. These were nearly full of 1925 pollen. I put the combs under water for 48 hours, then shook out most of the water and put them in supers over strong colonies. The bees have removed from 10 to 30 per cent of the pollen and are filling the combs with honey."—N. E. France, Grant County, Wis.

"Fifty per cent of the modern city housewives will put comb honey into the ice chest, and the result is that they care little for it. They will put bottled honey into the ice-chest also and many throw it away as soon as it begins to get cloudy because granulation has started."—Samuel Cushman, Cook County, Ill.

TALKS TO BEGINNERS

Geo. S. Demuth

Throughout the greater portion of the United States and Canada July is an eventful month in beekeeping. In some localities in the South the early crop of honey has already been harvested. In the northeastern portion of the United States and in eastern Canada, where white clover and alsike clover are the chief sources of nectar, the early honey flow usually closes some time during the month, while in sweet clover localities the honey flow may continue through the month and into August. If the weather becomes hot and dry, the honey flow usually closes earlier; but if there are frequent rains it may be prolonged. In any locality the closing of the honey flow may vary as much as a month, and it is important to watch the progress of the flowers furnishing the nectar in order to plan the management as the season closes. The beginner who is not familiar with his locality should be prepared for the closing of the honey flow some time this month, especially if in the clover region.

Indications of Close of Honey Flow

Sometimes one of the first indications of the approaching of the end of the honey flow noticed by the beekeeper is the tendency of the bees to store more honey in the brood-chamber, thus encroaching upon the brood-nest, sometimes crowding the queen down to a small portion of the brood combs. This is especially noticeable when the honey flow tapers off toward the close instead of closing abruptly. Also, as nectar becomes less abundant, the workers sometimes begin to crowd the drones down to the floor of the hive and out at the entrance. Frequently workers will be seen struggling with drones, apparently trying to lead them out of the hive.

Another indication of the approaching close of the season is the more liberal use of propolis, the gummy substance used to close cracks and crevices in the hive. In such cases the bees will begin to varnish over the surface of the new white combs with this substance, giving it a peculiar dirty appearance. For this reason supers of comb honey should be taken off before the combs are spoiled in this way if it is possible to have them finished before this occurs. Another indication of the approaching close of the season is the increasing tendency of the bees to sting. During the height of the honey flow they can usually be handled without trouble of this kind, but as the close of the honey flow approaches they sometimes become quite cross. As the supply of nectar diminshes there is a noticeable decrease in the number of workers going to and from the hive, and they become inclined to rob when the hives are opened and the honey exposed, which makes it more difficult to handle them.

Dangers from Robbing

The beginner who has enjoyed handling his bees during a good honey flow is liable to experience trouble from robber bees as the honey flow closes. If the hive is opened when nectar is scarce, bees from neighboring colonies may get a taste of stolen honey, after which they come back in great numbers. If many of these robbers are able to get into the hive they are sometimes able to overpower a colony that is not abundantly strong and carry away its honey. At such times the hives should not be opened unless necessary, and great care should be taken to prevent robbers from getting a first taste.

If robbers are about, little groups of bees may be seen trying to get into the cracks of the hives between the supers or around the edge of the cover if the hive has just recently been opened. This is always a danger signal, since bees do not do this except when trying to rob. When this is seen, it is time to quit working with the bees unless absolutely necessary, and in the case of weak colonies the entrances should be reduced to make effective defense less difficult.

Management of Late Swarms

Sometimes swarms issue so late in the season that they are scarcely able to make a good start before the honey flow ceases. In localities having a dependable fall honey flow swarms that issue late in July may be handled in the manner described in these Talks in the May issue; but it is sometimes best to hive the late swarm in a box or empty hive placed close beside the hive from which it came, then a day or two later unite the swarm with the original colony after having destroyed the queen-cells in the old hives. Such a procedure will not work out well except near the close of the honey flow.

In case a swarm issues and losses its queen on account of her wings having been clipped, all but one of the queen-cells should be destroyed, leaving the finest-appearing cell to requeen the colony. This should be done within five or six days after the swarm issues. A better way is to destroy all queen-cells soon after the swarm issues, then nine or ten days later again destroy every queen-cell and introduce a young laying queen.

Great care must be taken in destroying the queen-cells the second time, since some of them are quite small and difficult to see without shaking the bees from the combs, especially since they may be built anywhere on the combs in the midst of sealed worker brood.

Management of Supers Toward Close of Honey Flow

As long as the honey is being stored rapidly and the flowers hold out promise for a continuation of nectar secretion, supers should be given as fast as needed. The rule as to placing the new supers below the partly finished ones as given on page 386 in the June issue of this journal may be followed until there are indications that the season is closing, after which any new supers that are given should be placed on top of the partly finished one. When the new super is placed on top, work in the other supers is not neglected and the new super will be occupied if needed.

In comb-honey production during the later part of the honey flow, super work should be concentrated as much as possible in order to have the greatest number of sections finished. In order to do this, it is sometimes advisable to take off supers that are nearly finished, sort out the unfinished sections, and assemble them in a super to be put back on the hive. In this way it is sometimes possible to concentrate all of the unfinished sections in one super, which, if the season is closing, should be placed down on the brood-chamber with the empty super or the one in which the least work has been done on top. If there are not enough nearly finished sections to fill one super, those nearest completed should be placed in the middle where they will be finished more promptly.

As soon as the bees cease storing, or preferably a little before, all comb-honey supers should be taken off whether finishe dor not. The lighter, unfinished sections can be saved to feed the bees later, while the heavier ones can be used on the table or sold locally. Unfinished sections should not be left on the hives during the usual dearth of nectar between the early honey flow and the fall honey flow, since, if this is done, the sections will be badly stained with propolis and any honey that might be finished later will be inferior in appearance. If there is promise of a fall honey flow in the locality, it is better to take off the unfinished sections at the close of the early honey flow, then put them back when the fall honey flow begins in order to keep them clean.

Taking Off Finished Honey

The neatest and easiest way to take off finished supers of honey is by means of the bee-escape. This device is fitted into the hole in a bee-escape board (which is the same as the inner cover used on hives having a double cover). The bee-escape board with the bee-escape in place is then slipped under the super to be taken off, the cover being left in place on top and care being taken to see that it fits down tight so that robbers can not get in. The bees on discovering that they are imprisoned will pass through the bee-escape, but they can not go back into the super. After 12 to 24 hours the supers are usually cleaned of bees in this way.

Comb-honey supers can be taken off without the bee-escape by smoking at the top until most of the bees go down. In doing this the smoker should be so filled that it will not blow sparks or ashes into the super. As soon as the cover is lifted the bees should be driven down before they have an opportunity to get their heads into the cells to take honey; and as soon as most of the bees are out, the super should be lifted and the bees on the lower side should be swept off so they can not go back into the super. The super with the few remaining bees can then be carried into a building and placed before a window until the bees leave it and go to the window. The window should then be opened to permit these bees to escape, and the super should be put away where robber bees can not get at it. The finished honey should be stored in a warm dry room, since honey in the combs is liable to absorb moisture and become thin if stored in a damp place. In taking off the supers of finished comb honey, it is not always possible to tell by looking in at the top whether the honey is all sealed, so it is well to look in from below also.

Supers of honey to be extracted can be taken off by the bee-escape method, or combs can be taken out one at a time and the bees shaken and brushed off, after which the combs can be placed into an empty super to be carried into the honey-house.

In taking off honey to be extracted, it is not necessary to wait until the entire surface of the combs is sealed. Usually when three-fourths of the surface is sealed the honey is well ripened; but if there is any question about it, it may be left on the hive until thoroughly ripened, since the discoloration of the cappings in extracted-honey production does not injure the honey. As a rule, it is best to extract the honey as soon as it is taken from the hive, since it comes out of the combs best while still warm, and it will keep better sealed up in cans than in the combs, unless stored in a warm dry room.

JUST NEWS
Editors

The extensive library on beekeeuing of the late Mason J. Niblack, of Vincennes, Indiana, consisting of over 100 books and pamphlets, has been donated to the Department of Entomology of Purdue University. Mr. Niblack was an ardent student of beekeeping and was president of the Indiana State Beekeepers' Association from the time of its organization until his death last December.

"Bee Diseases in Ontario" is the title of Bulletin 3171 of the Ontario Department of Agriculture, this being a revision of Bulletin No. 276. The bulletin is written by Prof. F. Eric Millen, provincial apiarist of Ontario.

The Empire State Honey Marketing Co-operative Association, Inc., reports that its membership has quadrupled during the past year and that honey is now being warehoused for its members at both Syracuse and New York City. Plans are also being made toward warehousing honey at Albany. The association is paving the way for a large export business the coming season.

A new U. S. Department of Agriculture bulletin of interest to beekeepers has been recently published. Its title is "Effects on Honeybees of Spraying Fruit Trees with Arsenicals." The bulletin gives the result of investigations carried on during several years by N. E. McIndoo and Geo. S. Demuth. This bulletin may be obtained free of charge from the Office of Publications at Washington so long as the supply for free distribution lasts.

The report of the dominion apiarist, Dominion of Canada, for the year 1925, has recently been issued and contains as usual many things of practical interest to beekeepers, since it gives the results of carefully conducted experiments in practical problems which are being carried on over a series of years under the direction of C. B. Gooderham, dominion apiarist.

Extension Bulletin No. 98 on beekeeping has been recently issued by the Connecticut Agricultural College Extension Service. The bulletin is by Prof. L. B. Crandall and is designated as a beginner's handbook.

The report of the state apiarist of Iowa for 1925 contains 25 papers by as many authorities on various beekeeping problems. These papers occupy nearly 80 pages, thus making a valuable collection for the beekeeper's library. The report was prepared by Prof. F. B. Paddock, State Apiarist, Ames, Iowa.

Following is the program of the Dadant Memorial Chautauqua to be held at Platteville, Wis., August 17 to 20:

Tuesday, Aug. 17—Wisconsin Day. N. E. France, Chairman. Forenoon—Registration, assignment of tents, camp sites, rooms, etc.; announcements. Afternoon: Address of Welcome, Mayor of Platteville; Response for Beekeepers, Jas. Gwin, President of the Wisconsin State Beekeepers' Association, Madison; "Historical Review," N. E. France, Platteville; "Pioneer Beekeepers I Have Known," C. P. Dadant, Hamilton, Ill.; "Influence of Weather on Nectar Secretion," J. I. Hambleton, Washington, D. C.; business session of the Wisconsin State Beekeepers' Association.

Wednesday, Aug. 18—Minnesota Day. Prof. Francis Jager, Chairman. Forenoon: Announcements; "How Honey Can be Marketed at Regular Prices at All Times," Geo. Jacobson, Kaukauna; "Co-operative Marketing in Rock County, Wisconsin," S. J. Riesterer, Janesville; "Fond du Lac County's Co-operative Marketing Association," A. J. Schultz, Ripon; "Save the Geese That Lay the Golden Eggs," E. W. Atkins, G. B. Lewis Co., Watertown, Wis.; "The Cost of Marketing," G. H. Cale, Hamilton, Ill.; "Reaction of the Public to Honey in Prepared Food," Miss Malitta D. Fischer, Madison. Afternoon: "Principles of Marketing," H. H. Bakken, Madison; "Factors Which Affect the Marketing of Honey from the Standpoint of the Beekeeper, the Dealer, and the Consumer," H. F. Wilson and C. D. Adams. (The period from 2:30 to 4:30 will be given over to a conference on the practical phases of marketing honey. This will include a general discussion of the problem, a demonstration of grading according to the western and the eastern systems, and the application of grading to marketing.)

Thursday, Aug. 19—Illinois Day. Forenoon: Announcements; "Memorials and Their Purpose," H. F. Wilson; memorial address, N. E. France; "Historical Review," F. W. Muth, Cincinnati, O.; "Influence of Chas. Dadant & Son on Practical Beekeeping Methods," G. S. Demuth, Medina, Ohio. Afternoon: "History of Chas. Dadant & Son," H. C. Dadant, Hamilton, Ill.; "Memories of My Boyhood Days," C. P. Dadant; reception to Mr. and Mrs. Dadant and family, so all can meet them personally; memorial picnic.

Friday, Aug. 20—Iowa Day. F. B. Paddock, Chairman. A special conference of Apiary Inspectors will be held separately, from 9:00 to 12 o'clock, outside the pavilion. Forenoon: Announcements; opening address by H. B. Wilson, Commissioner of Agriculture and Immigration for the State of Louisiana; "The History of Beekeeping in Iowa," N. Williamson, Bronson, Iowa; "Beekeeping Problems in Illinois," V. G. Milum, Beekeeping Department, University of Illinois, Champaign, Ill.; "Demonstration Apiary Work in Iowa," N. Worthing, Iowa; "Shipping and Care of Package Bees," T. W. Burleson, Waxahachie, Tex.; "Memories of Early Inspection Days," N. E. France. Afternoon: "Bee-Disease Problems Which Can be Undertaken in the New Intermountain Region Laboratory," Jas. I. Hambleton; "North Dakota's Quarantine Against Bees on Combs: Why Placed and How Administered," J. A. Munro, N. D. Agr. College, Fargo, N. D.; "Apiary Inspection in Louisiana," W. E. Anderson, Baton Rouge, La.; "Iowa's Experience with Bee-Disease Control by Educational Methods," F. B. Paddock, Ames, Ia.; "The Place of Chemical Disinfectants in Area Clean-up Campaigns," S. B. Fracker, Madison.

GLEANED BY ASKING

Geo. S. Demuth

Build Queen-Cells When Given Ripe Cell

Question.—Why do bees always build cells of their own when I give a colony a ripe queen-cell to requeen it, even though they accept the cell I give them? Carrington Callaway.
Virginia.

Answer.—When a colony is deprived of its queen, the bees, as a rule, build several queen-cells. Apparently this is nature's way to make sure of producing a queen instead of taking chances with only one queen-cell. When a ripe queen-cell is given and accepted the bees follow this instinct and build several more.

First Flight of Young Bees

Question.—Why do bees come out of their hive at a certain time and fly about with their heads toward the entrance? Does this mean swarming? H. S. Louis.
China.

Answer.—Young bees fly in this manner when taking their first flight. They turn with their heads toward the hive in order to locate their home in reference to surrounding objects, so that they can return safely to their own hives. This is sometimes called the "play flight" of young bees. Usually this occurs shortly after noon. It does not indicate that the colony will swarm. When a swarm first starts to issue, some of the bees turn to look back as the young bees do in a play flight, but in the case of the issuing swarm the condition quickly changes to that of a rush of bees from the hive without turning to look back.

Confining Queen to Lower Story

Question.—You suggest that the queen be given the run of the hive until about the time the main honey flow starts, then place her in the lower story and confine her there by the queen-excluder. Will she not become crowded when this is done, and thus swarming be brought on? I have been thinking of giving her an extra hive-body above and using a queen-excluder to keep her up there while bees fill two lower hive-bodies with honey.
Washington. Ella C. Miller.

Answer.—The greatest objection to permitting the queen to go into a third story added at the top at the beginning of the honey flow is that the combs in the lower portion of the hive will then be filled with pollen and the colony may become crowded in the upper story despite the fact that there are two hive-bodies below. The bees do not readily store honey between the brood and the entrance of the hive, but they will fill these combs with pollen and thus render them useless for the season. By putting the queen down into the lower story before the combs are filled with pollen and giving additional supers of empty combs as fast as needed, placing each newly added super immediately above the excluder, the queen is not crowded with honey, for there are plenty of empty combs just above the brood. Also, if the colony was normal in strength in the spring so that the peak of brood-rearing was reached previous to the main honey flow, the queen will have plenty of room in the lower story, since brood-rearing is somewhat reduced at this time. Furthermore, there is less danger of swarming if the colony passes its peak of brood-rearing early than in case of colonies subnormal in strength which reach their peak during the height of the main honey flow.

Several Young Queens at Large in Hive

Question.—In introducing a new queen, I was unable to find the old one, but found three young queens all in the same hive. Isn't this a little unusual? J. J. Melvin.
Illinois.

Answer.—Apparently the old queen was being superseded and you opened the hive just as these young queens began to emerge. As a rule, when several queen-cells are present, especially in the case of swarming, the bees apparently hold the remaining young queens prisoners in their cells after the first young queen emerges, but the disturbance of opening the hive often causes the bees guarding the queen-cells to become confused and the young queens are permitted to emerge. This may also happen even without the colony being disturbed.

Spacing Frames in Hives

Question.—I have standard ten-frame hives using Hoffman self-spacing frames. When these frames are crowded together there is a one-inch space between the last frame and the hive on one side, while on the other side there is less than a bee space. How do you overcome this? Guy D. Johnson.
Iowa.

Answer.—Before closing the hive after the combs have been handled, the entire set of frames should be crowded together toward the opposite side of the hive by using the hive tool as a pry. Then the entire set of frames should be crowded back toward the operator by pushing from the opposite side in order to equalize the space between the two outside combs and the hive.

Giving Supers to New Swarms

Question.—How soon after a swarm is hived should the super be put on?
Maryland. Fred Pennewill.

Answer.—For extracted-honey production, the super should be put on immediately after the swarm is hived, the super being separated from the brood-chamber by means of a queen-excluder when swarming occurs during the honey flow. As a rule, in such cases, the bees have already been at work in the supers when the swarm issues, so that the super or supers are transferred from the old hive to the new, the new hive being placed

on the old stand and the old hive set to one side. In the case of comb honey, the super should be given as soon as the bees have built enough comb in the brood-chamber for the queen to begin laying there. Usually this is within two days after hiving the swarm. The comb-honey super can be put on immediately if the queen-excluder is used to prevent the queen from going into the sections when only frames of foundation are used in the brood-chamber, as is usually the case in comb-honey production, since the giving of empty combs in the brood-chamber when hiving swarms in producing comb honey usually checks the work in the supers for several days, and sometimes causes the bees to slow down in their work on account of crowding the brood-chamber with honey.

Preventing the Mismating of Queens

Question.—How can I keep my Italian bees from crossing with black bees? Nearly all the other bees in this neighborhood are blacks.
Arkansas. F. C. Mitchell.

Answer.—It is practically impossible to prevent Italians from crossing with blacks when the blacks are numerous in the vicinity. You can reduce the number of mismated queens by rearing a large number of Italian drones, thus increasing the chances of pure mating. It is also possible to increase the number of pure matings by confining the young queens to their hives by means of a queen-excluder, then confining the drones in a colony of Italian bees having a large number of drones in the same way. Late in the afternoon after the black drones have ceased flying, the Italian drones can be released and at the same time the entrance is opened so that the young queen can fly also. Some degree of success by this method has been reported, but, as a rule, this is not necessary for success in producing honey.

Clipping Queens Without Injuring Them

Question.—What is the best way to clip queens? I am always afraid of hurting them by holding them while clipping.
New York. Adaline Eldridge.

Answer.—Nearly every beekeeper has his own way of clipping queens, this being largely a matter of individual choice and habit. One good way to hold the queen is to pick her up by taking hold of both wings between the thumb and forefinger of the right hand, then transferring her to the left hand by grasping her legs between the thumb and forefinger. If the queen holds her wings too close to her body to pick her up readily, she can be induced to lift them by touching her on the back. While she lifts her wings both can easily be grasped between the thumb and forefinger. If only one wing is grasped it is difficult to transfer the queen to the left hand, as described above. By holding the queen between the thumb and forefinger of the left hand by grasping her legs, the right hand is now free to pick up the scissors and clip her wings. The queen may be put back on the combs by grasping the remaining wing between the thumb and forefinger of the right hand and setting her back on the combs. If this is done carefully without permitting the queen to run or become excited, she will go about her work immediately as if nothing had happened.

Nectar Carriers and Pollen Carriers

Question.—Do bees carry nectar at the same time they carry pollen? Francis H. Craig.
Ohio.

Answer.—As a rule, apparently bees carry either nectar or pollen, but not both at the same time. However, under some conditions many bees will be seen carrying both nectar and pollen. In such cases the pellets of pollen are smaller than when the bees are carrying pollen only. It is usually possible to tell which bees are carrying both by noting the size of the pollen pellets as well as the distention of the abdomen of the workers, caused by the filling of the honey sac.

Laws Relating to Keeping Bees in Cities

Question.—Can the rules of a city in any way forbid keeping bees within the city limits provided proper care is taken of them?
Ohio. Harry H. Monroe.

Answer.—There have been a number of court decisions in regard to keeping bees within towns or cities. The courts have held that the city can not enforce an ordinance prohibiting the keeping of bees within the city limits, declaring that bees are not in themselves a nuisance, although in particular cases they become such. If the bees are properly cared for so that they are not a nuisance they can be kept in cities and towns so far as the legal aspect is concerned. However, great care should be taken to prevent trouble or criticism. In some cases it is well to locate the hives in the attic of the dwelling. In such cases, inquisitive neighbors need not know that they are there, since if properly located and cared for they may never notice them.

Colonies Become Queenless After Swarming

Question.—I found one of my colonies had no worker brood but only drone brood. This colony had cast two swarms and filled two ten-frame supers besides having 40 pounds in the brood-chamber. Why should they be queenless? J. B. Beavers.
West Virginia.

Answer.—It is probable that the young queen left in the hive after swarming was over was lost in her mating flight, thus leaving the colony hopelessly queenless. This condition often occurs, and for this reason it is well to examine the parent colony about two weeks after the prime swarm issues in order to determine whether or not the young queen has successfully mated and begun to lay in order that another queen may be given if she is found to be lost.

A. I. Root's Story of His Own Life

So are the ways of every one that is greedy of gain; it taketh away the life of the owners thereof.—Proverbs 1:19.

In the fall of 1874 the weather was hot and sultry, and, a cider mill near by having commenced work, my bees were on hand punctually. If I resorted to outdoor feeding to keep them away I should also have to feed my neighbors' bees; yet I could not have the bees annoy others, and if they continued operating the cider mill I felt that I should be compelled to feed sugar, and to feed all the bees could carry away. To add to my troubles, a suspiciously large number of bees were already crawling about in the dust looking for all the world as if they had had too much cider. I was heartily glad that the next day was Sunday, for I was tired.

I arose early Sunday morning, feeling that at least one day in the week the bees would not be tempted, for cider mills fortunately did not work on Sunday. Early that morning they seemed to be very peevishly inclined, for they buzzed from hive to hive in a manner that betokened an unhealthy excitement and a greed for gain not to be procured through the ordinary path of honest industry. I could readily imagine the feeling that a gambler or burglar must have after first pocketing dishonest gain. Perhaps he had just abandoned an honorable calling because times were dull, and, full of unhealthy excitement at such a sudden and easy way of getting money, he might for a time evade the stinging reproaches of a guilty conscience for having appropriated without equivalent the honest earnings of his fellowmen. Have bees any conscience? Or are they just as happy while robbing their neighbors as when honestly employed?

Later, after the dew was off, I was pleased to see the bees launching out in an opposite direction from the cider mill, and when they began returning laden and with that weary happy hum that surely betokens honest labor, my curiosity was aroused. By nine o'clock a perfect stream of bees was pouring out in this same direction and they hurried out of the hive, filing in with the throng in a way that seemed to indicate none would be left. It was only an hour and a half until church time, yet I clambered over the fence and started off in the same direction, my enthusiasm being kept up by hearing the hum overhead. After passing through a piece of woods nearly a mile from home, I found about half an acre of boneset, or thoroughwort, and the view that I suddenly came upon, where the young grandchildren of my imported queen were joyously dancing over the blossoms, was indescribable. The flowers were nearly on a level with my head and the music of the bees was decidedly different in tone from that around the cider mill or around the outdoor feeders.

The bees' bodies were all dusty with the snowy pollen, and their happy hum seemed to indicate that they, like myself, had such a feeling of thankfulness to our Creator for the beautiful world he had given us that even existence was a pleasure.

I went further and found the bees working on white snakeroot, not yet quite in bloom, but still visited plentifully. Another plant interested me still more. Several years before I had noticed in the fall bees coming in laden with a queer white spot on the tuft between the roots of their wings. This sometimes had almost the appearance of a drop of white paint on them. At different times I had determined to find what this white powder might be, but I was invariably baffled and usually consoled myself by thinking it must be from thistle. Today, however, no bees were on the thistle, and yet this white spote was plainer than ever as the bees hurried into the hives to unload.

The bells were ringing for church and I was more than a mile away in the woods, yet with uncovered head I stopped in mute wonder at the solution of the riddle that had perplexed me so long. The plant was the wild touch-me-not, so familiar to children on account of the wonderful pods that snap when touched. The honey was secreted in a spur in the bottom of the flower, and the bees could reach this only by diving down into it almost out of sight. When the coveted treasure was obtained, it backed out with a ludicrous kicking and sprawling of the legs, and in so doing the down on its back was ruffled up the wrong way. This would be pretty certain to get the pollen dusted all over her, but nature, to make

sure, had planted a little tuft that bore the pollen just on the upper side of the entrance to the flower, and as the bee struggled to get out the white pollen was brushed onto her back most effectually to be carried to the next flower, and so on.

The bees kept on with their work on fall plants, though occasionally too many of them were visiting the cider mill. On September 19 the owner of the cider mill came over to tell me that something must be done with "them bees." Of course I dampened the sugar in the outdoor feeders and soon had all the bees, tame and wild, within a mile or more having a grand free picnic at my expense. The weather had been unusually warm and sultry, but the cool days that soon came ended this trouble for the season.

Before the cold weather came on, however, there was more trouble at the cider mill. On September 25 the mill was lying idle at my expense, for even dampened sugar would not call the bees away. I do not know whether the trouble was that I had so many bees or whether the grandchildren of that imported queen had a special fancy for sweet apple juice. I began to fear that bees and cider mills were unsuited to be neighbors. At any rate, it was a rather expensive joke. Finally we thought of cloth curtains as a remedy. Some strips of pine, a few nails, $2.50 worth of sheeting, and two willing hands completed the whole thing in a couple of hours. The relief I felt in seeing the bees completely baffled and obliged to return to their legitimate duties, together with the knowledge that the cider man could return to his, was more than I could express.

Birth of the A B C of Bee Culture

In a supplement to the April number of Gleanings for 1877 I began a series of writings under the head "The A B C of Bee Culture," because there were many more asking to be taught the very first principles than anything else, and I resolved that if I ever wrote a bee book it would be especially for this very class who, when they looked into bee culture for the first time, never wearied of asking for more and more knowledge.

In May, 1877, knowing that many of my readers had been annoyed by repetition impossible to avoid, if I did justice to the host of beginners that were coming on the stage each year for the first time, I decided to try a remedy. I announced that I was going to the expense of having a book kept in type so that I could revise it every month or every week, if I needed to. In other words, as fast as I discovered a mistake or some method better than a plan given in the book, I would make the improvement before another copy was sent out. I decided that the book should be published in groups of eight pages each, and I decided to use this space in answering questions instead of going to the laborious work of answering so many by postal card. Then instead of inserting the same thing over and over in Gleanings in Bee Culture I would simply mail the number treating of the question asked and leave it to the good nature of the questioner to send me 5 cents for my trouble, if he chose.

Wiring Frames

In the August number of Gleanings for 1878, in answer to a correspondent who told about wrapping his combs with fine copper wire to prevent them from breaking when in the extractor, I suggested that if the wire were pressed partly into the foundation there would be little if any sagging of the comb. I also suggested that iron wire be used instead of copper, since it would be so much cheaper and after being covered with wax there would be no chance for it to rust. By the latter part of September I had brood all nicely sealed, right over wires embedded in the foundation.

Someone suggested that a heated buttonhook could be used for imbedding wires in foundation. I made a trial of it and found it worked well, but it required heating too often. Knowing that a lump of copper is about the best thing to retain heat, I had a small copper soldering iron worked over into a most convenient tool. It was heated over a coal-oil stove, and when just right it softened the wax so it stuck firmly to every inch of the wire, and the weight of the tool was just right to sink the wire into the foundation without requiring any pressure from the hands. One heating of the copper answered for ten frames.

Wires can not be securely fastened to the top and bottom-bar of the frame when incorporated in the foundation before it is put into the frames, but if the frame is pierced as I suggested the work is substantially done and at very little expense.

Beekeepers' Supplies for 1926

Begin the season right. Buy early and good quality of hives, sections, Three-ply foundation, etc. We carry Root's goods of high quality in stock that are mostly in demand by the average beekeeper. Can fill orders promptly. Beeswax wanted. Send for our free catalog.

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Montgomery County. High Hill, Mo.

Classified Advertisements

Notices will be inserted in the classified columns for 7c per word. You must say you want your advertisement in the classified columns, or we will not be responsible for errors. For special conditions on bee and queen advertising please write us. Copy should be received by 15th of preceding month to insure insertion. Cash with copy if credit has not been established previously.

REGULAR ADVERTISERS DISCONTINUED IN GOOD STANDING

(Temporary advertisers and advertisers of small lots, when discontinued, are not here listed. It is only regular advertisers of regular lines who are here listed when their advertisements are discontinued when they are in good standing.)

A. A. Beals, Bergquist Mfg. Co., J. E. Crane & Son, Gulf Coast Bee Co., Hoffman & Hauck, W. A. Holmberg, W. H. Laws, J. E. Harris (because dead), N. Norman, A. I. Root Co. of Iowa, Gilbert J. Sergeant, E. A. Simmons, Shaw & Ramsey, R. V. Stearns, Van Wyngarden Bros., Colonial Poultry Farms, Valley Bee & Honey Co.

HONEY AND WAX FOR SALE

WHITE clover honey in 60-lb. cans. None finer. J. F. Moore, Tiffin, Ohio.

FOR SALE—Extracted and comb honey. M. W. Cousineau, Moorhead, Minn.

FOR SALE—Good quality of clover honey. Lewis O. Klaty, Carsonville, Mich.

FOR SALE—Clover honey in 60-lb. cans. Write for price. Wm. Oliver, Wayne, Neb.

FOR SALE—Gallberry and tupelo comb honey in 5-lb. pails. J. W. Sherman, Valdosta, Ga.

FOR SALE—Buckwheat honey in 60-pound cans, 8½c. Robert Conn, Roaring Branch, Pa.

HONEY for sale, any kind, any quantity. The John G. Paton Co., 217 Broadway, New York City.

FOR SALE—Comb honey at reduced prices. Write stating your wants. H. G. Quirin, Bellevue, Ohio.

NEW crop white clover extracted honey, after August 1, 1926. Write for prices. J. G. Burtis, Marietta, N. Y.

EXTRACTED HONEY FOR SALE—Clover, buckwheat, any kind of package. C. J. Baldridge, Kendaia, N. Y.

FOR SALE—Comb and extracted white clover honey. Prices on request. Dr. E. Kohn & Son, Grover Hill, Ohio.

WHITE clover honey, one to five cases, 11c; 5 cases or more, 10½c. Sample, 20c. Hoehn & Honigford, Ottoville, Ohio.

FOR SALE—Extracted, comb, and chunk honey. Prices on request. Sample, 15c. F. W. Summerfield, Waterville, Ohio.

RASPBERRY HONEY put up in new 60-lb. cans, two cans in a case, for 12½c a lb. Sample for 15c. Elmer Hutchinson & Son, Lake City, Mich.

CHOICE lots of clover honey still in hands of producers. Excellent quality. Few bargain lots. The A. I. Root Co. of Iowa, Council Bluffs, Iowa.

FOR SALE—Choice white and light amber Michigan extracted honey in NEW 60-lb. cans, case or carload. Sample, 15c. David Running Filion, Mich.

GOLDENROD and buckwheat comb honey in 4¼ beeway sections for sale at reasonable prices. Quality very good. H. E. Crowther, Jefferson, Ohio.

FINEST quality white sweet clover honey. Write for prices, stating quantity and pack desired. M. C. Tanquary, Red River Apiaries, Chaffee, N. Dak.

FOR SALE—Carload Michigan light extracted honey, 10c per lb.; also 80 cases light amber at 8c per lb., 120 lbs. per case. L. S. Griggs, 711 Avon St., Flint, Mich.

EXTRACTED honey in 2 new cans to case, clover, liquid, 12c lb.; buckwheat clover, mixed, 8c lb. Either granulated, 1c lb. less. J. J. Lewis, 184 Water St., Lyons, N. Y.

FOR SALE—Delicious amber honey, buckwheat and clover mixed. Put up in 60-lb. cans, $5.00 per can; $9.60 per case of two, f. o. b. Adams & Myers, Ransomville, N. Y.

WE still have a few cases of light amber extracted honey in new cans and cases that we are closing out to make room for the new crop, at only $10.00 per case of two cans. Address E. D. Townsend & Sons, Northstar, Michigan.

HONEY FOR SALE—For the beekeepers whose supply may be short, we have the choicest extra quality sweet clover, fine white clover, alfalfa, and some mesquite that we can offer our friend honey-sellers who may be short. Write for prices. The A. I. Root Co., Medina, Ohio.

HONEY AND WAX WANTED

WANTED—Fancy white clover comb. No granulation. Also water white extracted. Quote, freight prepaid. E. W. Peirce, 345 Cliffwood Ave., Zanesville, Ohio.

BEESWAX WANTED — Highest market prices paid. Cash or in exchange for supplies. Write us for quotation before shipping elsewhere. The A. I. Root Co., Medina, Ohio.

WANTED—Shipments of old comb and cappings for rendering. We pay the highest cash and trade prices, charging but 5c a pound for wax rendered. The Fred W. Muth Co., Pearl and Walnut Sts., Cincinnati, Ohio.

BEESWAX WANTED—We are now paying very high prices for beeswax, both cash and trade. Write us for quotations and we will be very glad to quote you f. o. b. Hamilton or f. o. b. your shipping point. Dadant & Sons, Hamilton, Ill.

FOR SALE OR EXCHANGE

60-lb. tin cans, two in case, 30c per case. Good condition. Longfellow Bros., Hallowell, Me.

GOOD as new 4¼x1⅞ double-tier comb honey display cases. Jack A. Clayton, Webb City, Mo.

ROOT bee supplies, cans, used and new, for Kansas and Oklahoma. A. V. Small, Augusta, Kansas.

MAKE queen introduction SURE. One SAFIN cage by mail, 25c; five for $1.00. Allen Latham, Norwichtown, Conn.

WILL exchange bee supplies for good garden tractor or power lawn mower. Charles Ferguson, 97 N. Montgomery St., Walden, N. Y.

ROBINSON'S comb foundation will please the bees, and the price will please the beekeeper. Wax worked at lowest rates. E. S. Robinson, Mayville, N. Y.

HONEY LABELS—Attractive and original. made especially for your business. Lowest prices. Catalog FREE. Liberty Company, Station D, Box 4186, Cleveland, Ohio.

SPECIAL for the commercial honey producer in Canada, the Simplicity 45-comb extractor. For full information. The Ontario Beekeepers' Supply House, Guelph, Ont.

HAVE Wurlitzer Tenor Saxaphone and Deagan Marimbaphone. Will sell or trade for bee supplies and Root extractor, or what have you? Write H. L. Reichert, Carrington, N. D.

FOR SALE—One four-frame extractor, hand power, reversible pockets, for standard frames, one uncapping table and knife, both steam-heated. Alexander honey strainer. All for $55.00. R. F. Pratt, R. F. D. No. 3, Cuyahoga Falls, Ohio.

FOR SALE—Good second-hand 60-lb. cans, two cans to a case boxed. We have large stocks of these on hand. Please write for prices if interested. We are offering only good cans and good cases. C. H. W. Weber & Co., Cincinnati, Ohio.

A FIRST-CLASS OUTFIT—Equipment for the management of 100 colonies of bees for both comb and extracted honey. Also 110 standard 8-frame queen-mating hives. All goods in fine condition. No disease. Priced right for immediate sale. Wm. R. Stephens, Wingate, Indiana.

BEES AND QUEENS

WHOLE colonies of bees, if advertised for sale in these columns, must either be guaranteed free from disease, or, if not so guaranteed, the exact condition of the bees and the conditions of sale must be clearly stated in the advertisement; or, it will be satisfactory if the advertiser will agree to furnish a certificate of health from some authorized bee inspctor at time of sale.

300 good used 60-lb. cans. Write for prices. W. I. Boggs, DeSoto, Mo.

PACKAGE BEES—Reduced prices. Bargain. Van's Honey Farms, Hebron, Ind.

GOOD QUEENS, 60c each. See my display ad in this issue. D. W. Howell, Shellman, Ga.

THE best three-band Italian queens by return mail. See ad on page 475. J. M. Cutts & Son.

HONEY GIRL strain's quality queens at 70c; $65.00 per 100. T. A. Plauche, Hamburg, La.

30 colonies, guaranteed free from disease, equipment, cheap. Mrs. C. V. Baker, Stoutsville, Ohio.

ALL SOLD OUT on package bees. The Spencer Bee Farms, Orleans Parkway, R. F. D. 2, New Orleans, La.

CITRONELLE Italian queens. Prompt delivery, every queen guaranteed. See summer prices in large ad on page 489.

LEATHER-COLORED Italian queens, $2.00 until June 1; after, $1.00; tested, $2.00. A. W. Yates, 15 Chapman St., Hartford, Conn.

FOR SALE—Italian queens ready May 15. One queen, $1.00; 6 queens, $5.50; 12 queens, $10.00. W. W. Talley, R. F. D. No. 4, Greenville, Ala.

GOLDEN Italian queens, 1, $1.00; 6, $5.00; 12, $10.00; $75.00 per 100. Write for price on package bees. T. J. Talley, R. F. D. No. 3, Greenville, Ala.

GOLDEN ITALIAN queens, producing large beautiful bees, solid yellow to tip. Package bees, nuclei circular, 1926, ready free. Dr. White Bee Co., Sandia, Texas.

QUEENS, 50c. See display advertisement. G. H. Merrill, Piedmont, S. C.

BRIGHT AMERICAN BEAUTY ITALIAN queens,, $1.00 each. Most prolific strain in America. J. L. Morgan, Prop., Tupelo Apiaries, Apalachicola, Fla.

LATHAM'S "She-suits-me" untested 3-banders, $1.00 each. Packages and nuclei. Introduction insured. Send for circular. Allen Latham, Norwichtown, Conn.

FOR SALE—In 32-gallon bbls. only, choicest quality tupelo honey, unexcelled for table use, also as a blend to prevent granulation. Sample, 25c. M. L. Nisbet & Bro., Bainbridge, Ga.

EARLY package bees, select three-banded Italian queens. Most northern breeder in California. It's an exclusive business with me, not a sideline. J. E. Wing, Cottonwood, Calif.

BRIGHT three-band Italian queens with special introducing cages. Let's introduce 'em right this year. Write for circular and price list. J. F. Diemer, R. F. D. No. 3, Liberty, Mo.

YOU want good queens; try mine. Cells are fed and developed in full colonies. No poorly nourished queens. Golden breeders used. 1 to 9, $1.00; 10 to 25, 90c. M. Stevenson, Westwago, La.

FOR SALE—Three-banded Italian queens, untested, 80c each; 6, $4.75; 12, $9.00. Tested queens, $1.50 each. Safe arrival and satisfaction guaranteed. Robert B. Spicer, Wharton, N. J.

IMPORTED three-banded Italian queens. Very gentle and wonderful honey-getters. 1, $1.00; 6, $5.00; 12, $10.00; 100, $75.00. Safe arrival and satisfaction guaranteed. G. E. Whittle, Mussel, Ala.

C. W. PHELPS & SON are still producing the famous Phelps Golden Queens. PROLIFIC, GENTLE and very BEAUTIFUL, $2.00 each; 6 for $10.00; $18.00 a doz. C. W. Phelps & Son, Binghamton, N. Y.

GOLDEN ITALIAN queens for sale, 1, $1.00; 6, $5.00; 12, $1.00; 100, $75.00. Package bees in season, 20 per cent to book your order for spring delivery. J. F. Rogers, Greenville, R. F. D. No. 3, Ala.

HOLLOPETER'S "Bred for business" untested Italian queens, light three-banded stock, ready June 1, $1.00 each. Write for circular. J. B. Holiopeter, Rockton, Pa. Commercial queen-breeder continuous from 1911.

AGAIN our northern-bred leather-colored Italian bees have wintered fine, and we guarantee that no disease exists in our yards. Queens after June 15, $1.25 each; $12.00 per doz. Charles Stewart, Johnstown, N. Y.

PURE ITALIAN QUEENS — Untested, $1.00; tested, $1.50; 2-lb. package, $3.00. Add price of queen wanted. Safe arrival guaranteed after May 10. Write for prices on colonies. Birdie M. Hartle, 924 Pleasant St., Reynoldsville, Pa.

Buy Italian queen bees now and be ready for fall honey crop. Graydon's queens will gather honey for you. Prices, 75c each, or $8.50 per doz. Try a few of them. You will not be disappointed. Graydon Bros., Greenville, R. F. D. No. 4, Alabama.

HAVE you tried the famous Carolina queens? If not, write for circular. Untested, 1 to 10, $1.00; 10 to 24, 85c; 25 to 50, 75c; select untested, $1.25; select tested, $2.25; tested, $2.00. Carolina Bee Co., W. O. Curtis, Mgr., Graham, N. C.

GOLDEN Italian queens, untested, 1 to 5, $1.00 each; 6 to 11, 90c each; 12 or more, 80c each; tested, $1.50; select tested, $2.50 each. No disease. Safe arrival and satisfaction guaranteed. 20 years a breeder. D. T. Gaster, R. F. D. No. 2, Randleman, N. C.

PACKAGE bees, three-banded Italians. Caney Valley Apiaries, Bay City, Texas.

BOOKING orders for high-grade three-banded Italian bees and queens. 2-lb. pkg., $4.50, discount on quantity. Select untested queen, $1.00; $10.00 per dozen; select tested queen, $1.50. Inspector's certificate with each. J. Allen, Catherine, Ala.

GOLDEN ITALIAN QUEENS and BEES—1, $1.00; 6, $5.00; 12, $10.00; 100, $75.00. Package bees, 1 lb., $2.75; 2 lbs., $4.75 with queen; 10 or more, $4.50. They work for nothing and board themselves. Sam Foley, Greenville, R. F. D. No. 3, Ala.

GOLDEN Italian queens, untested, $1.00 each; 6 for $5.40; 12 for $9.60; tested, $1.50; select tested, $2.50. Three-banded Italian queens, $1.10 each; 6 for $6.00; 12 for $10.80. No disease, safe arrival and satisfaction guaranteed. Sam Hinshaw, Randleman, N. C.

GOLDEN ITALIAN QUEENS for 1926, the big bright hustling kind (the kind that gets the honey). Satisfied customers everywhere. Untested, $1.00 each; 6, $5.00; 12, $10.00. $75.00 per 100. Tested, $2.00 each. Safe arrival guaranteed. E. F. Day, Honoraville, Alabama.

I am now filling orders for Golden Italian Queens that are bred for business and gentleness, as well as good color. State inspected, delivered safe. Satisfied customers everywhere. Untested, $1.00 each; 6 for $5.25; 12 or more, 75c each. Hazel V. Bonkemeyer, R. F. D. No. 2, Randleman, N. C.

AM now ready to supply fine young three-banded Italian queens by return mail. Bred for gentleness and honey-getters; $1.00 each; 6, $5.00. S. G. Crocker, Jr., Roland Park P. O., Baltimore, Md.

FOR SALE—Golden Italian queens, 1 untested queen, $1.00 ready about May 20; 1 tested queen, $2.00, ready about June 20. These queens are fine ones and will please. When orders can not be filled in six days, money returned unless otherwise ordered. J. F. Michael, Winchester, R. F. D. No. 1, Ind.

1000 SCOTT QUEENS! In addition to the queens we use in our own yards we will raise 1000 of the same grade for our customers. We rear our own queens because they suit us better than any we have been able to buy. We raise honey-getters that are of good color and not cross. Ready about June 5. $1.00 each, or $10.00 per dozen. The Scott Apiaries, La Grange, Ind.

FOR SALE—Choice bright Italian queens. I have been building up this strain for the last 22 years for vigorous hustlers, good winterers, gentleness and fine color. These queens will equal the best on the market. Health certificate goes with the queens. Prices: 1 untested queen, $1.25; 12 untested queens, $12.00; 1 breeder, $10.00. Emil W. Gutekunst, Colden, N. Y.

HOW DO YOU DO? Yes, sir, I am a bee-keeper and queen-breeder in the midst of my sixteenth successful season. If strong hustling colonies that produce big honey crops is what you want, then head your colonies with my select untested queens. We ship only the best quality, and make our guarantee good. Look up my ad on page 000. P. M. Williams, Ft. Deposit, Ala.

The following have been bonded as breeders of queens and package bees until January 1, 1927: J. F. Diemer, Liberty, Mo.; C. B. Banks-ton, Buffalo, Texas; T. W. Burleson, Waxahachie, Texas; Emil W. Gutekunst, Colden, N. Y.; J. G. Puett & Sons, Moultrie, Ga.; J. J. Scott, Crowville, La.; Jasper Knight, Hayneville, Ala. Surety Department of the American Honey Producers' League. Colin P. Campbell, Attorney-in-Fact, Grand Rapids, Mich.

HELP WANTED

TWO men needed in extensive apiary business. Part season or permanent position. Give full particulars. C. W. Aeppler, Box 145, Oconomowoc, Wis.

ROOT EXTRACTOR EXCHANGE COLUMN

(A free advertising service to Root customers who wish to dispose of their present extractors as they are purchasing Root machines of greater capacity.)

FOR SALE—B. P. No. 17 Root's autmoatic 8-frame extractor. L. S. Griggs, 711 Avon St., Flint, Mich.

ROOT TWO-FRAME extractor for sale. As good as new and in perfect condition. Make me an offer. C. W. Aeppler, Box 145, Oconomowoc, Wis.

FOR SALE—One Novice Root extractor; one Root two-frame reversible extractor; one Root four-frame automatic hand-power extractor; one 8-frame extractor. All of these extractors are in very good condition and ready to extract honey. L. M. Hubbard, Onsted, Mich.

MISCELLANEOUS

THE BEE WORLD—The leading bee journal in Britain and the only international bee-review in existence. It is read, re-read, and treasured. Will it not appeal to you? Specimen copy free from the publishers. Send us a postcard today. It is well worth your little trouble. The Apis Club, Benson, Oxon, England.

Patents Pat. Counsel of The A. I. Root Co. Practice in Patent Office and Court.
CHAS. J. WILLIAMSON,
McLachlan Bldg., Washington, D.C.

PURE ITALIAN QUEENS

Of tested quality. April to November delivery. Bees inspected. Select untested, $1.00; dozen, $9.00.

Hunter & Reamy, Quitman, Ga.

Bright Italian Queens

A GOOD STRAIN BRED FOR BUSINESS—NONE BETTER

SUMMER PRICES

Untested, 1 to 24	$0.75 each
25 to 49	65c each
50 or more	.60c each

Satisfaction guaranteed. Can ship on receipt of your order. Package bees in season.

York Bee Co.

H. F. YORK.

JESUP, GEORGIA.

"Make Your Honey Famous"

"Dress your honey in a good looking A glass jar, and it will become the Famous Package of your Neigborhood."

THE A. I. ROOT COMPANY, Medina, Ohio.
HOFFMAN & HAUCK, Inc., Ozone Park, N. Y.
A. G. WOODMAN COMPANY, Grand Rapids, Mich.
THE A. I. ROOT COMPANY, Leonia, New Jersey
A. I. ROOT CO. OF CHICAGO, Chicago, Illinois.
A. I. ROOT COMPANY OF IOWA, Council Bluffs, Iowa.
A. I. ROOT COMPANY OF ST. PAUL. St. Paul, Minn.
A. I. ROOT COMPANY of SYRACUSE, Syracuse, N. Y.
M. H. HUNT & SON, Lansing, Michigan
F. COOMBS & SONS. Brattleboro. Vt.
A. W. YATES, Hartford, Conn.

Hazel-Atlas Glass Company

Wheeling, West Virginia

TOO LATE FOR CLASSIFICATION

FOR SALE—Water white sweet clover honey. North Dakota's best. Victor Apiaries, Chaffee, N. D.

FOR SALE—20 colonies of bees, guaranteed free from disease, 400 drawn combs, 400 frames in flat, 200 wired, and all other equipment. Come and get them. Thomas J. Herivel, 9339 Burnette St., Detroit, Mich.

WILL offer for the season, SHAW strain of three-banded Italian queens, untested, $1.00 each, or $10.00 per dozen. Yards located near Loreauville. Two years a queen-breeder for E. D. Townsend. Safe arrival guaranteed. Stanley J. Crochet, New Iberia, R. F. D. No. 1, Box 24, La.

IF you want good clean bees, prompt service and fair treatment let me fill your order, large or small. Can begin shipping real early. The date is up to you. Two pounds Italian bees with or without comb brood, $2.75; 3 pounds bees, $3.50. Queens at $1.00 each. Golden or three-banded. Have six yards to draw from. Have never had any kind of disease. F. M. Morgan, Hamburg, La.

TALKING QUEENS

(They speak for themselves.)

I have plenty of fine queens on hand. Prompt service and satisfaction. Single queen, $1.00; 12 for $10.00; 100 for $85.00. I have also a number of fine breeding queens at $5.00 each. Service guaranteed for at least one season. No disease.

W. H. LAWS, BOX 505, WHARTON, TEXAS

Mott's Northern Bred Italian Queens

All selected queens. Guarantee all to be pure mated, or replace free. No disease. Safe arrival guaranteed. Select untested till June 1, $1.25 each; $1.00 each thereafter. Select tested, $2.00, virgins, 50c. Satisfied customers for 21 years. Michigan bound on the north and east by Ontario, Canada. List free.

E. E. MOTT & SON - GLENWOOD, MICH.

SOUR HONEY DEPT.

I aint feelin too cheerful and aint goin to pretend I am except as regardin the upshots of my winter-hunger resistant experimentashun. Everybody's satisfied except Demuth and Jack Deyell and the high-brow crowd and possibly my life pardner. Not a peep of complaint about havin to wait for queens one year, not from Boss Carr or Jes Dalton or Doc Needham or Jay Smith or Rus Kelty or Geo. Rea or Poet Laird. They're all satisfied, every one of em. And I am better pleased at seein Boss Carr comin out stronger and stronger all the time onto my side. No winter packin for him in N. J. and no smart Alec food-chamber business either as advocated by Demuth for I have seen as a friend sent it his article in the May Bee Bulletin belaborin Demuth's pet baby awful. Me and Carr hit it off together the best of anybody agin this babyin of bees with winter packin and all the honey you can raise goin for stores. Carr is goin to have the

(Continued on page 475.)

St. Romain High Quality

GOLDEN AND THREE-BANDED ITALIAN QUEENS AND BEES

Now from June 1st on there will be an attractive price on queens and package bees. Write for prices on same. Address

John St. Romain

MARKSVILLE - - LOUISIANA

With a Honeytime QUEEN in your Honey Flow Scene You'll Find a Honey Crop Keen

Improved Quality Reduced Prices

ALBINOS

Beautiful, white and fuzzy with distinct, white bands upon a dark abdomen, form close clusters upon their brood, are not excitable, but are real gentle, great honey-gatherers and build white cappings. Time tested and proven, let the Albino bee show you **why** it has come to stay. These little hustlers will be sure to multiply your beekeeping enjoyment.

A thousand HONEYTIME Albino queens, each one a reason for increased interest and love for bees will be reared for your orders each month.

AFTER JULY 1
SELECT UNTESTED ALBINOS

1	to 9 inclusive	$1.40 each
10	to 24 inclusive	1.30 each
25	to 49 inclusive	1.25 each
50	to 99 inclusive	1.20 each
100	and over	1.15 each

Albinos Now Priced for Wholesale Requeening.

All orders filled in rotation as received. Satisfaction guaranteed.

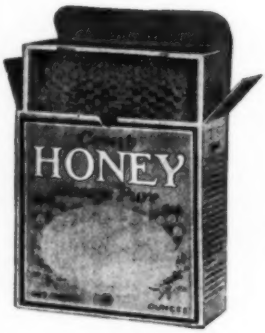
Honeytime Queens Are Certified Queens

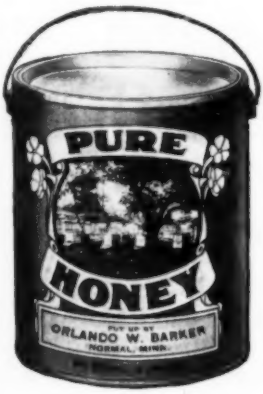
In their growth they acquire the greatest possible development of the splendid characteristics inherited from the breeding stock.

HONEYTIME APIARIES, SLEEPY EYE, MINNESOTA

A Complete Line of

Honey-Selling Helps





ATTRACTIVE LABELS
28 different designs.

NEW COMB HONEY CARTONS
4¼x1½, 4¼x1⅞, and 4x5x1⅜ sections.

HONEY LEAFLETS IN COLORS
Worth-while selling helps.

METAL "HONEY FOR SALE" SIGNS
Heavy baked enamel sheet iron sign, 14x18 inches, yellow and black.

COUNTER DISPLAY CASES
For roadside stand or grocery store.

LITHOGRAPHED CONTAINERS
2½, 5, and 10 pounds.

TALL CLEAR WHITE GLASSWARE
8, 16, 32, and 48 ounce sizes.

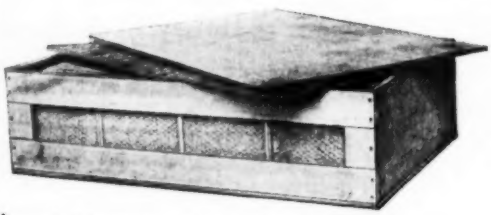
PLAIN TIN CONTAINERS
2½, 5, 10, and 60 pounds.

GLUE FOR LABELING TIN
Never use waterglass with labels, it fades the ink.

"HONEY AS A FOOD" BOOKLET
16 pages of valuable information.

NEW "HONEY FOR SALE" SIGNS
Set of three waterproof roadside signs—two signs 24x42 inches; one sign, 18x36 inches.

ADVERTISING CUTS
Advertise your honey in the local paper.



Write for Our Special 1926 Prices

The A. I. Root Company

West Side Station Medina, Ohio

SOUR HONEY DEPT.

(Continued from page 473.)

very first Triumph queen as is reared so he is.

I said I wasn't feelin none too pert. Well I aint. The cold weather kept me in the lumber yard right up to June 1 and there aint nothin worse. My reglar business summer times is yard decorashun. I dont call it landscape gardenin for I dont like that word garden much. As a professhun I suppose I am a landscape decorator. So is Ab. Yard decorashun was late startin. Somethin's the matter with the creek too as so the fish won't bite up to yet atall. This is worryin me and Ab the awfulest. We're havin some trouble too about title to my new coon hound pup. Several friends has writ askin how I got my new coon pup any way. When me and Ab is sure we have got him for keeps I may go into

(Continued on page 477.)

Queens 50c

In dozen lots or more. Bright three-band Italians. Select untested, 1 to 6, 60c; 6, $3.50; 12, $6.00. Absolute satisfaction guaranteed.

G. H. MERRILL, PIEDMONT, S. C.

QUEENS

Bright Three-Banded Italian

75 cents

by Return Mail

Mr. Beekeeper, why can we offer you good queens so cheap? Because basswood and clover are in full bloom, turning out nectar by the barrels. All of our colonies are boiling over with bees, and all of our nuclei in full operation turning out queens every day as fine as you ever saw. Now is your time to head your colonies with a good queen at a low price. NORMAN BROS.' queens are backed by years of improving and selecting from the finest mothers and mated to selected drones. You take no risk. If you are not satisfied return them and we will replace or refund your money. All orders filled by return mail or soon thereafter. We ship package bees by express only.

PRICES JUNE AND JULY

	1	6	12	100
Untested queens	$0.75	$4.40	$8.50	$65.00
Select Untested	.85	5.00	9.50	70.00
Tested queens	1.50	8.50	16.00	
Select tested	1.75 each			

One 2-lb. package with select untested queen, $3.75; 12 or more, $3.50 each.

We guarantee pure mating, safe arrival, free from disease, and satisfaction in U. S. A. and Canada.

Norman Bros.' Apiaries

NAPTEL - - - - ALABAMA

Queens by Return Mail

The package season is now over and our two queen yards with more than a thousand nuclei and three experienced men are prepared to care for your queen orders promptly.

Why tolerate just ordinary queens when the best queens cost so little? The honey production records of our queens are unsurpassed.

1 untested, 80c; 12 for $9.00. 1 Tested, $1.50. Safe arrival and satisfaction guaranteed. No disease, inspection certificate with each shipment. Write for circular and prices on quantities.

J. M. Cutts & Son

R. 1. MONTGOMERY, ALA.

Hot Z-Z-Z-ijjety

$500 for a Queen

BEEKEEPERS—This is your opportunity to buy **Miller's Improved Strain of Italian Queens.** Our queens produce large bees, bright in color. This strain of bees is making a reputation for honey-gathering, hardiness, and gentleness. In 1924 one colony on test produced 100 lbs. straight red clover comb honey. Write for our literature.

PRICES FOR 1926—Untested, 1, $1.50; 6, $8.00; 12, $15.00. Tested, $2.50 each.

GUARANTEE—We guarantee safe arrival in U. S. A. and Canada. If you are not satisfied with queens when you receive them return them at once and I will refund you your money.

We guarantee all Untested Queens to be laying before we will ship them. We guarantee our queens to be free from all disease.

Wood J. Miller

Connersville - - - - Indiana

QUEENS

Buying queens is a common sense problem. You can buy a pair of shoes for a dollar, but you get just a dollar's worth in wear. The same rule applies to queens. You can buy queens for fifty cents, but stop and figure how many people sell articles for less than they are worth. We produce good queens and of course we have to get what they are worth or we could not afford to advertise their quality.

Prices Italian Queens from Miller Strain, July 1 to Oct. 15: Untested, 90c each; select untested, $1.00 each; tested, $1.10 each; select tested, $1.25 each. Breeders, $5.00 to $25.00. Note: We make no reduction for quantities as we take same pains with large order as small.

GEO. A. HUMMER & SON, Prairie Point, Miss.

Carniolans

are most excellent workers. My 1925 average was over 150 lbs. extracted per colony. The past spring was a hard one for bees to develop brood, but Carniolans forged right ahead with brood-rearing and were ready when the flow came on. Besides they are very prolific at all times and very gentle, can be handled most of the time without a veil. Ask for my free paper, "Merits of the Carniolan Bee."

1 select untested ..... $1.10 each
6 select untested or more.. 1.00 each
Select tested ..... 2.00 each

Just at the close of the flow in July is a good time to requeen. Twenty years' experience with Carniolans. I also breed Jan Strgar and M. Ambrozic imported strains. Safe arrival in U. S. and satisfaction guaranteed.

ALBERT G. HANN

GLEN GARDNER - - - NEW JERSEY

QUEENS, 50c, ONE OR MORE

In order to advertise our high grade three-banded Italian queens we are offering them at the above price. Our queens are carefully reared from queen mothers of known merit and we know they will please you.

THE COFFEY APIARIES,
Where the good queens come from.
P. O. Box 8. Whitsett, Texas.

—QUEENS OF—

Moore's Strain

OF ITALIANS PRODUCE WORKERS
That fill the supers quick
With honey nice and thick.

They have won a world-wide reputation for honey-gathering, hardiness, gentleness, etc.

Untested queens, $1.00; 6, $5.00; 12, $9.00. Select Untested, $1.25; 6, $6.00; 12, $11.00. Safe arrival and satisfaction guaranteed. Circular free.

J. P. MOORE, QUEN BREEDER,
Route 1, Morgan, Kentucky.

SMITH'S QUEENS

Our bees are BRIGHT, GENTLE, THREE-BAND ITALIANS, and are crossed with the bees from several of the best beekeepers in America. So this is why we feel that when you buy queens from us you get as good as can be had, and at a very reasonable price. Write for folder, or order from these prices.

We guarantee all bees and queens to reach you in good condition, and please you in every way. Never had disease in our apiary. Remember that our SERVICE is always at your command.

Select queens: 1 to 11, 70c each; 12 to 99, 65c each; 100 or more, 60c each.

W. C. Smith & Company

CALHOUN - - - ALABAMA

Line-Bred "Honey Girl" Queens

Now grafting from colonies of this year's best producers. One colony "Hamburg Honey Girl" breeding and one of "Conrad's Honey Girl" breeding built colonies estimated at 125,000 worker bees. We drew on these colonies for 30 pounds (150,000) bees this short shipping season. We believe this summer's queens should be superior to any we have ever produced.

QUEENS—	1 to 3.	4 to 9.	10 to 49.	50 to 99.	100 or more.
Untested queen	$1.00 ea.	$0.90 ea.	$0.85 ea.	$0.80 ea.	$0.75 ea.
Selected untested	1.25 ea.	1.15 ea.	1.10 ea.	1.05 ea.	1.00 ea.
Tested queen	2.00 ea.	1.80 ea.	1.70 ea.	1.60 ea.	1.50 ea.
Selected tested	3.00 ea.	2.80 ea.	2.70 ea.	2.60 ea.	2.50 ea.

Our best selected tested queens for breeding shipped with 2-pound combless package, or with nucleus of one-frame brood and one pound bees, $10.00 each.

Honey Girl Apiaries, Hamburg, Louisiana

SOUR HONEY DEPT.

(Continued from page 475.)

a full explanashun. But Ab right now says we are squeezed into a pretty small hole on this new pup and we aint roamin around the streets with him none. And I aint got no bees yet lookin forwards to the Triumph strain next winter. But that aint no worry. That's a blessin. I got Jack Deyell beat all to pieces on that with his 1500 swarms or so eatin their heads off and no honey crop in sight and so awful cold and dry. He'll be in a insane asylum buzzin like a bee and floppin his arms for bees wings afore July 4 when me and Ab will be down on the creek bank comfortable and happy and between pullin out fish figgerin how we will go bee huntin about Aug. 1 and line em and get a half dozen wild swarms for the fall flow as will be just prime for winter-hunger resistant stock. That's all settled. And Demuth is about as happy as Jack too. So who's sayin what constitoots a success any way? I'll set me

(Continued on page 479.)

Italian Queens

Beautiful honey gatherers. One, 90c; 6, $4.75: 12, $9.00; 50, $35.00; 100, $60.00. For quality, service, everything guaranteed, try

TAYLOR APIARIES, Lock Box, Luverne, Ala.

Morrison & Martin's Three-Banders

Having consolidated with Mr. Martin, we have increased our apiaries and queen-mating capacity 200 per cent, so will be able to take care of all queen orders promptly. We have been building up this strain for comb-honey production for the past 15 years. With our methods of management we produce large crops of comb honey year after year with very little swarming. This strain has been bred up for gentleness, honey-gathering, prolificness. Cap their honey white, gather very little propolis. Disease-free.

Queens are now ready at the following prices: Untested, one, $1.00; six, $5.50; dozen, $10.50; hundred, $85.00. Tested, $1.50 each. Breeders, $5.00 and $10.00 each.

Safe arrival and perfect satisfaction guaranteed.

Morrison & Martin

Mandale - - - - Ohio

(Formerly Geo. Morrison)

Achord Queens

The Best of Pure Three-Banded Italians

Select Young Laying Queens now $1.00 each any number

After June 15th

75c each, any number

W. D. Achord

Fitzpatrick - - Alabama

The Secret of Success

Is good young Italian queens. I have them, as good as money can buy. I have doubled my output for this season, and have room for more customers, so I am offering the following prices that I may add your name to my list of satisfied customers.

One select untested Italian queen, 75c; six, $4.00; twelve, $7.50; one hundred, $60.00. Your order will not be too large for me to handle, or too small to be appreciated. Pure mating, safe delivery, and satisfaction guaranteed on every queen. Health certificate with each shipment.

P. M. Williams

FORT DEPOSIT - - - ALABAMA

OVERSTOCKED ON THE FOLLOWING

ROOT QUALITY BEE SUPPLIES

Standard ten-frame hives packed in 5's, Beeway section supers with fittings, Shipping-cases for 4x5 plain sections, and other items. Write for prices.

Stiles Bee Supply Company, Stillwater, Okla.

Townsend's Bulletin No. 30

Down in south Louisiana, almost on the Gulf, on the beautiful priarie of the Teche, are located the three original Shaw queen-rearing yards. They are not large yards, and it is not the intention of the present owners to produce queens in quantities, but, when quality is considered, we can assure the prospective customer we are there "with a full hand," ready to rake in the honors where quality is concerned. These three queen-rearing yards are where the Aristocrat strain of queens will be produced in the future, as in the past, under the Shaw management. The Aristocrat strain of bees was made possible by our having all the Shaw breeding stock to select from, and we assure the public that we have used the very best of this stock in developing this superior Aristocrat strain. We own all the bees on this prairie—in fact, all the bees within seven miles of Loreauville—so can assure good matings of queens with genuine Aristocrat drones. Our supply of Aristocrat untested queens will be limited, so we will not quote queens by the hundred, a dozen being as large an order as we care to accept, for we had rather distribute our Aristocrat queens among many, rather than a few; for, really, the price we are now selling our Aristocrat queens for is an introductory one and can not be expected to continue long. We quote for July and August mailings: Untested at $1.00 each, six for $5.50, or $10.00 per dozen. If your queen arrives dead, mail her back and get a replacement. Address Townsend & Camos, Northstar, Michigan, where the sales department is located. Queens will be mailed direct from Loreauville, La., "where the good queens come from."

When You Want

Bee Supplies or Honey Containers "AT ONCE"

Send Your Order to

W. R. PERRY CO.

We have a complete stock of Leahy's Standard Bee Supplies. We make prompt shipment. Your order goes out of Omaha on the first train.

We want to send you our new price list on honey containers. Write for our catalog and container list.

W. R. PERRY CO.

1205 Howard St., Omaha, Neb.

"Our catalog prices are low"

August Lotz Company

Boyd, Wisconsin

Our Motto:

QUALITY - SERVICE DEPENDABILITY

SECTIONS our Speciality.

A full line of other supplies in stock.

Prompt shipment guaranteed.

Write for our free catalog.

SOUR HONEY DEPT.

(Continued from page 477.)

and Ab up again Demuth and Jack Deyell and John Rockyfeller any time for pleasure in life not barrin our good earnest wives as bein figgered in either. No one's all happy, so they aint.

Friends is rallyin to my support as never afore. A half dozen postals congratulates me on the success of my Triumph strain. One says the fat-mouse test ought to be adopted by Jim Hambleton and Sturtevant at Washinton when they are in doubt as to any Gov't colonies bein in good condition—just let the mice in the hives and if they fat up the bees was all O. K.

* * *

Mr. J. L. Byer, Esq., and me have made up. In the last Gleanins he joins Ab's and my school of philosophy and o. k.'s it and is welcome to the ranks of hard-headed forrard-lookin beekeepers and true fishermen. He may make me his U. S. black fox agent and so do the right thing. But whether he does or not, I can't hold out agin a man who can look all sorts of bee troubles dead in the eye

(Continued on page 482.)

Beeswax

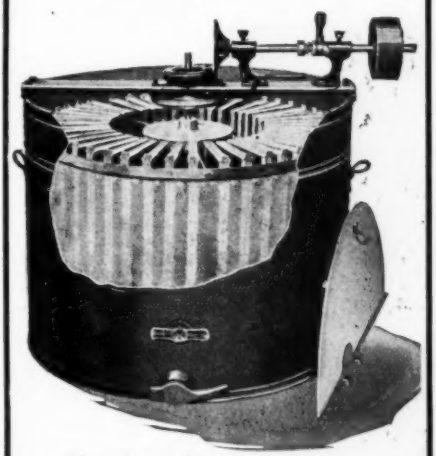
WE PAY THE BEST MARKET PRICE

Write for prices and shipping instructions.

The A. I. Root Co.

Medina, Ohio

At Syracuse



The Simplicity Extractor On Exhibit

A. I. Root Co. of Syracuse

1631 WEST GENESEE ST., SYRACUSE, NEW YORK

Serves You Best

New England

beekeepers can find a full line of supplies here at all times. Send your orders in early and be prepared for a good season. Nearly all supplies can now be sent by parcel post, saving you time and money. Send for catalog.

H. H. JEPSON

237 Park St. Medford, 55 Mass.

When he owned two box hives.

Schenectady Bee Supply Company

242 Union Street, Schenectady, New York

—

WM. H. KEYSER, Manager.

The man who grew with the business

—

ROOT QUALITY BEE SUPPLIES

—

Send for catalog.

—

Highest market price allowed for your wax.

As manager with car-lot stock to draw from.

QUEENS

July is the ideal month to make increase and build up colonies strong for the late honey flow. Our high-grade Italians are sure to please you. Our catalog gives complete instruction for making increase, introducing, etc.

Prices: 1 to 4 inclusive, $1.50 each; 5 to 9, inclusive, $1.45 each; 10 to 24, inclusive, $1.40 each; 25 to 49, inclusive, $1.35 each; 50 to 74 inclusive, $1.30 each; 75 to 99, inclusive, $1.25 each; 100 or more, $1.20 each. Breeding queens, service guaranteed for season, $10 each, every queen guaranteed.

JAY SMITH

ROUTE 3. VINCENNES, INDIANA

Knight's Queens

Line-Bred Three-Banded Leather-Colored Italians

THEY ARE GENTLE, THE BEST HONEY GATHERERS, AND BEST WINTERERS

PRICES

1 select (one grade) young laying queen $1.00
5 select (one grade) young laying queens 4.00
10 and more, each ..... .75

All queens guaranteed mated pure, and to give perfect satisfaction. Can still furnish 2-lb. package bees with queen for $4.75, f. o. b. your address.

Am breeding from queen I sent in 1924 to Mr. Elmer Kommer, Vice-President Illinois Beekeepers' Association, Woodhull, Ill. Mr. Kommer returned her to me to breed from and writes that her colony produced eleven supers comb honey in 1925. The whole yard, all headed with my queens, averaged seven supers. Surely nothing but a good strain of bees can accomplish such high averages. No disease. Health certificate with each shipment. Prompt service. All queens shipped in large 6-hole comfortable cages.

Jasper Knight, Hayneville, Ala.

Queens - Queens Queens

PURE ITALIANS

We have rounded up a good package shipping season, and will give our whole attention to the rearing and shipping of queens during the fall months. We will have a continuous honey flow, which makes queen-rearing ideal. Just the kind to produce the fine queens which are so much necessary to make your colonies winter well and make a crop of honey in 1927.

At the price we offer them no beekeeper can afford to use any but the best. We guarantee our queens to be unsurpassed.

For six years we have sold Quality Queens with honest service. If you doubt our honesty, ask your neighbor beekeepers who have dealt with us.

Prices for the balance of the season: One, 75c; six, $4.25; dozen, $8.25; hundred, $62. Tested queens, $1.50 each.

We guarantee safe arrival, pure mating, and satisfaction. Give us a trial. Our queens produce bees which are beautiful, gentle, and good honey-gatherers, also good winterers. State inspected.

Crenshaw County Apiaries

RUTLEDGE - - - - ALABAMA

Three-Banded Italian Queens

From the finest honey-producing strain in Alabama

SUMMER AND FALL PRICES

75c each

25 OR MORE,

60c each

Pure mating, safe arrival, and satisfaction guaranteed.

John C. Hogg

Ramer - - Alabama

Jensen's Queens

BRIGHT THREE-BANDED ITALIANS

June 65c Each

IN HUNDRED LOTS

"OUR PRIDE," the best we know how to produce, and that is one thing we do know how to do. With the package season out of the way, our every attention will center in our queen yards.

Having again enlarged our yards we will be able to fill all orders promptly.

We guarantee: Freedom from disease, pure mating, safe arrival, prompt service and satisfaction.

Prices for June: Untested, 1 to 25, 80c each; 26 to 99, 70c each; 100 and up, 65c each. Tested, $1.25; breeders, $5.00.

JENSEN'S APIARIES

CRAWFORD, MISSISSIPPI

Queens! Queens! Queens!

After thirty years of select breeding our Italian strain of three-banded bees, we have one that is unparalleled or unsurpassed for disease-resisting qualities and honey production. Among the breeding queens we have for 1926 is one from Manitoba, Can. This queen, "Mrs. Manitoba Wright," has an authentic record of 646½ pounds surplus honey and one increase from spring count for 1925; 25 pounds one day. All queens reared by us are from mothers having wonderful records. Write for 1926 circular and price list. Booking orders now.

Having orders well in hand we can now ship by return mail or very soon. Wings of queens are clipped on request free of charge.

Untested, 75c each; lots one dozen, 65c each; $60.00 per 100. Tested, $1.50 each. We guarantee prompt shipment and that all queens will arrive in perfect condition.

M. C. Berry & Co.

BOX 697. MONTGOMERY, ALA.

Forehand's Three-band Italian Queens

are leaders in honey getting, gentleness, and beauty. They have been bred for the highest qualities for 33 years.

UNTESTED QUEENS, 60c EACH, UP TO 12; 12 to 25, 55c EACH.
WRITE FOR PRICES ON LARGER QUANTITIES.

100 per cent live delivery and perfect satisfaction guaranteed in United States and Canada. Descriptive circular on queens upon application.

N. FOREHAND - - GONZALEZ, FLORIDA

Leininger's Strain of Italians

We have been queen-breeders for nearly 50 years. In all this time we have tested nearly every strain of Italian Bees in the U. S. A. By this careful selection and breeding we have succeeded in producing a strain of bees surpassed by none but superior to many—bees that are gentle and great honey-gatherers. Therefore, if you buy queens from us you may be assured that back of them are nearly 50 years of careful breeding for the production of honey.

Beginning June 1 we will be ready to mail queens from this famous strain at the following prices: 1 to 5, $1.00 each; 6, $5.50; 12, $10.50; 100, $85.00. Tested, $1.50 each. Select breeders, $5.00 to $10.00 each.

Safe arrival and satisfaction guaranteed.

Fred Leininger & Son, Delphos, Ohio

Get Running's Queens and Get Honey

CHOICE ITALIAN STOCK
guaranteed.
Choice untested laying queens

75c Each

Tested queens

$1.50

Write for prices on 50 or more.
All queens sent from Sumterville, Alabama.

—Address—

David Running
SUMTERVILLE, ALABAMA,
or
FILION, MICHIGAN

SOUR HONEY DEPT.

(Continued from page 479.)

and yet smile right on and be comforted complete because the fishin is good. I now recommend Mr. Byer's black foxes to everybody everywhere. He's goin to now get one of the very first Triumph queens too.

* * *

Otto Schulze of Nora, Va., is a friend of mine. He writes as follows: "Tell Old Drone I pity his case of an up-to-date beekeeper like himself that finds it necessary to work in the lumber yard to keep the grim wolf, the grocer, and the hardware man from his door."

I wont publish all he says for he says something about tommyrot and me. But on the whole he aint agin me.

* * *

Doc Phillips of Ithaca University has gone to Europe. He received the decree of Apis Tyrannus I guess it was from his university or somewhere before goin.

(Continued on page 483.)

75c

gets a select untested guaranteed pure-mated Italian queen in July and August. Write for prices on 50 to 100.

THE CROWVILLE APIARIES
J. J. Scott, Prop. Crowville, La.

Pure, Bright Three-Banded Italian Queens

In selecting breeders used in our queen yards we have not overlooked prolificness, honey-gathering qualities, beauty, and longevity. In fact, we are always looking for something better when picking our breeders.

We absolutely guarantee safe delivery and satisfaction, and are ever ready to make honest adjustments in case we have made a mistake; our customers shall be the judges only. In case you received a queen from us that does not please you, write us and we will make it right by replacement or money refunded.

Prices for June: Select untested queens, each, 75c; 6, $4.25; 12, $8.00; 100, $65.00. Select tested queens, each, $1.25; 6, $7.00; 12, $13.50. Large 6-hole cages used with invert sugar candy. Health certificate with each order.

Lake Shore Apiaries, Covington, Louisiana

SOUR HONEY DEPT.

(Continued from page 482.)

The fact is he's gone over there to make that bee library of his just so much bigger. He needn't send me no bee reports or books writ in Checoslovack or Montenegro nor lead me up and down shelves full of em when I go to visit him and tell me he's got 8 feet and 7 ins. of Checoslovack bee literature. I don't care if he has. He won't ever invite me any way and I couldn't go anyway unless in the fall and the coon catch extry good.

* * *

Reynolds Metz, of East Lansing, Mich., is a friend of mine as is in trouble. He writes as follows besides sympathizin with me and takin a square crack at R. B. WiLson and Doc Phillips and all highbrows. "Ike Kelty, bee boss of Michigan, is all right. But about a month ago I asked him where I could buy some bees, and he sics me onto Mac Krebs, the new state inspector, who takes my money and

(Continued on page 484.)

Beekeepers! A New Market for Your Besewax

Send samples of your stocks to us. We are ready to submit offerings on any quantities. We will pay cash upon receipt of shipments.

S. C. Johnson & Son, Racine, Wis.

Attention: R. P. Gardiner.

Wheeling

Friction Top

CANS

YOUR products need the increased protection afforded by sturdy, sanitary Wheeling Cans. Made of prime tin plate. Plain, lacquered or lithographed to your exact specifications. Literature gladly mailed on request.

WHEELING CAN COMPANY
Wheeling, W. Va.

Mr. Western Beekeeper

Have you received our new catalog? We are headquarters for all beekeepers' supplies. Let us figure on your requirements in hives and frames.

Do not forget that we are the only West Coast manufacturers of the famous Airco Foundation, both regular and three-ply. We also carry Root Extractors, Root Sections and all Root appliances.

When you have honey to sell be sure to get our quotation. We are always in the market for beeswax.

The A. L. Boyden Company

(Formerly The A. I. Root Co. of California)

Los Angeles: Box 240, Arcade Station **San Francisco: 52 Main St.**

EDWARDS SAVES YOU MONEY

ON METAL ROOFS

We own our own sheet mills, roll our own sheets, make them into high grade Reo Metal Shingles, Sidings, Ceilings, and Roofings of type and style for every kind of building. Also Ready-Made Garages and Farm Buildings. We control every operation from the raw material to the finished roof, and we sell direct from our factories to the user. Not a dollar to divide with anybody but the customer! You get better values for less money.

OUTLAST THREE ORDINARY ROOFS

Edwards Metal Roofs are weather-proof, lightning-proof and fire-proof. Thousands of home owners take advantage of our offer every year. Ten thousand farmer friends are our best advertisement.

FREE SAMPLES & Roofing Book

Write today! Get our low prices and free samples. Save money, get better quality. Ask for Roofing Book No. 1s3, or for Garage Book.

THE EDWARDS MFG. CO.
1s3 785 Butler St.
Cincinnati, Ohio

SOUR HONEY DEPT.

(Continued from page 484.)

gives me some bees which would be all right yet if they were winter-hunger resistants and sqush resistant, too, for a tree fell on them and squshed them. So Krebs has the money and I've got a lot of smashed bees.''

Why I like Kelty is he owns a coon dog and invites me and Jay Smith up there. There's a friend, I tell you.

OLD DRONE.

P. S.—Next month I wont write nothin. I am goin to just print from my friends who have writ. The fishin at the creek may turn good any time. I need all my time then, and friends has writ better than I can. If I can't publish them all I'll extract the jewels from each one and publish so much. Also the coon hound pup has got to start bein trained if me and Ab keeps holt onto him.

P. S. 2.—Here is a sample of how friends has writ me:

Greenfield, Fla., May 4, 1926.

Old Drone, Care Gleanings, Medina, Ohio.

Darn Old Cuss You:—Whyfore dont you tell

(Continued on page 485.)

GOOD QUEENS, 60c EACH

Untested, 1 to 25, 75c each; 26 to 49, 65c each; 50 or more, 60c. Tested, $1.50 each. Extra Select Tested, $3.00 each.

Carefully raised from good breeders.

D. W. Howell, Shellman, Ga.

THE MAIL IS CONVENIENT

4% BANKING BY MAIL

—and safe. Calling at this Bank to make deposits or withdrawals may not be easy for you. That is why we have developed our system of BANKING BY MAIL. Our out-of-town customers receive the same safety and service to which our Medina patrons are accustomed.

We invite YOUR account.

THE HOME OF THE HONEY BEE

THE SAVINGS DEPOSIT BANK CO. MEDINA OHIO.

E. B. SPITZER, PRES. E. R. ROOT, VICE PRES. H. E. AYLARD, CASHIER

First Quality Products

— No Seconds —

We have called your attention to our very low prices on Hives, Supers, and Sections. We offer equally attractive prices on all our other supplies. **Here are some more:**

Brood Frames, 10-frame Hoffman.....$5.75 per 100
Extracting Frames, 10-frame shallow.... 3.95 per 100

SHIPPING CASES Falcon Quality Products **HONEY CONTAINERS**

W. T. FALCONER MFG. CO., Dept. 10, Falconer, N. Y.

SOUR HONEY DEPT.

(Continued from page 484.)

me in April number how them Triumphs come out? You mayhaps be wrong but I am for you, if you lose. It will be great, that strain of bees down here. But ours don't hole up. They sit down and starve in dead winter. How about a radio on each hive to keep their spirits up?

Bass biting fine here. Our ice went out last week (en our refer) and I caught 8 bass one morning, largest 7¼ lbs.,, small one, 2½ lbs. We throw them back under eleven inches here (state law). If some of you snow birds would come to my apiary in Alabama or my place here in Florida, I'd introduce you to a non-resistant strain of trout, bass, and jackfish.

Now, I want to be your friend, but if you don't open that hive by June, I'm going to join your wife, and knock the slats off of your worthy carcass.

I have two good coon dogs and one bird dog, and we have plenty of coons.

Keep up the "Old Drone" column, etc.

R. A. Snyder.

Mr. Snyder, didn't you forget, after

(Continued on page 487.)

The Apiarist's Friend.

GERMAN SCYTHES AND SICKLES, with "Dangel" cutting edge, permit cutting of grass in the apiary with minimum disturbance of the colonies. Catalog on request.

The Marugg Co., Dept. B, Tracy City, Tenn.

HONEY PAILS

MANUFACTURERS OF

"BLOSSOM-SWEET"

AND

BADGER BRAND

5 and 10 lb. Honey Pails.

We specialize in 5 and 10 lb. round pails and 60 lb. square cans. Plain and Lithographed cans of all descriptions.

WILKES-BARRE CAN CO.

ESTABLISHED 1856

WILKES-BARRE, PENNA.

KILL WEEDS THIS QUICK EASY WAY--MULCH SOIL

Thousands of practical gardeners everywhere now use the **BARKER** to kill the weeds and make the level dust mulch which they know is so vital to the growth of plants. The rotary blades, working in combination with the underground knife, cut the weeds, shake the dirt off, and turn the roots up. "Best Weed-Killer Ever Used." **In the same operation,** they break up the clods and surface crust and spread this finely worked soil evenly. Mix and aerate the soil without disturbing nature's method of packing around the roots. Guards protect the leaves. You work a strip 6 to 12 inches wide, at a fast walk. A great time and labor saver.

"The BARKER is miles ahead of them all," says Wilbert Kelly, Reading, Pa. "Sure is death on weeds," Henry Christensen, Council Bluffs, Ia. "Worth all the rest combined," J. A. Musson, Bainbridge, N. Y.

WRITE FOR FREE BOOK

It will pay you to investigate. Our free book illustrates the BARKER and its work, gives sizes, prices, delivered to your station, etc. Write for it and Special Factory-to-User offer.

BARKER MFG. CO., BOX 116, DAVID CITY, NEBR.

North Dakota--a Bee Paradise

Has thousands of acres of sweet clover that produces honey of extra fine quality. Following is the acreage of sweet clover in several eastern North Dakota counties:

GRAND FORKS COUNTY	**27,053 ACRES**
CASS COUNTY	**20,265 ACRES**
NELSON COUNTY	**16,312 ACRES**
RAMSEY COUNTY	**24,782 ACRES**
TOWNER COUNTY	**18,280 ACRES**
PEMBINA COUNTY	**15,120 ACRES**

Conditions in North Dakota and northern Minnesota are extremely favorable for bees; warm, sunny days and cool nights promote a large flow of nectar. Honey-producing season extends from June until October. Bee authorities and experienced keepers predict that this will soon be one of the leading bee and honey producing regions.

Write for **FREE BOOK** on the agricultural resources of North Dakota and full information about **LOW ROUND TRIP HOMESEEKERS' EXCURSION RATES.**

E. C. Leedy, Dept. G., Great Northern Railway, St. Paul, Minnesota

Honey Containers---

2½-lb. Cans, per carton of 100.....$4.00 5-lb. Pails per carton of 100.....$6.75
5-lb. Pails, per carton of 50..... 3.50 10-lb. Pails per carton of 50..... 5.00

Write for prices on lithographed pails. Above packed in cartons which are dust proof, light, and easy to handle, keeping your cans and pails clean until you are ready to use them.

5-pound Pails per case of 12.....$1.10 60-pound Cans 1 per case.....$0.90
10-pound Pails per case of 6..... .90 60-pound Cans 2 per case..... 1.25

Above packed in wooden reshipping cases.

Glass Jars---

8-OUNCE HONEY CAPACITY, TALL OR FLUTED, PER CASE OF 24.....$1.05
16-OUNCE HONEY CAPACITY, TALL OR FLUTED, PER CASE OF 24..... 1.35
32-OUNCE HONEY CAPACITY, PER CASE OF 12..... .95

All above prices F. O. B. Reedsville, Wisconsin. Write for prices on large quantities of pails and glass jars, stating number and sizes wanted.

Wood Shipping Cases---

	10	100
Single tier with 2-inch glass fronts—		
To hold 12 4¼x4¼x1⅞-inch Sections	$2.95	$25.90
To hold 24 4¼x4¼x1⅞-inch Sections	3.90	34.50
To hold 24 4 x5 x1⅞-inch Sections	3.60	31.50
Double tier with 2-inch glass fronts—		
To hold 24 4¼x4¼x1⅞-inch Sections	4.20	37.50

Save money on your supplies by getting our quotations on your requirements.

A. H. Rusch & Son Co., Reedsville, Wisconsin

SOUR HONEY DEPT.

(Continued from page 485.)

mentionin bees, bass, trout, jackfish, coon dogs, bird dog and plenty of coons, some reference to free transportation for me and Ab southbound? Me and Ab would probably scorn it but we might not if the lumber yard got to loomin up too prominent again late fall comin. Also callin me a —old cus may be aint flatterin. I've been called worse tho in some dog deals. O. D.

P. S. 3.—Is Mr. Zeitler complimentin me or contrarywise as below?

Luxemburg, Wis., June 5, 1926.

Dear Old Drone:—I read with great interest your account of the event of unpacking your hunger-resistant strain Triumph bees. Your success is somewhat analgous to what the doctor said when the wife of a worrying man was critically ill. He said: "Your wife is near death's door, but I think I can pull her through.

Yours for better success next year,
H. A. ZEITLER.

GOLDEN QUEENS AND THREE-BANDED BEES FOR 1926

Untested queens, $1.00 each. Tested, $1.50 each. 2-lb. package of bees, $3.00; 3-lb. package of bees, $4.50; nucleus, $1.50 per frame. Additional pound of bees with nucleus, $1.00. No disease, safe arrival guaranteed; bees inspected; never had disease.

J. W. SHERMAN, VALDOSTA, GEORGIA.

Albinos

are the most beautiful bees you ever saw—virtually shieks in the bee world. Their white fuzzy coats are very luxuriant. Albinos are extremely gentle, very prolific and good honey-gatherers.

It is a remarkable fact that these bees do not readily hybridize. They retain their individuality. In this region they are found in many small, neglected apiaries in their purity. Having been neighbors for many years of black bees and Italians, they prove to the world that they do have the ability to keep themselves pure and uncontaminated.

We have had these bees in our yards for over twenty-five years and have found them to be better bees in every respect than any Italians that we have ever tried. I have the original stock of the noted beekeeper who perfected them over forty years ago.

Try a few of these queens. I know you will be pleased with their appearance, the character of their workers and their wonderful capacity as honey producers.

I am prepared to furnish Albino queens at the following prices: Untested, $2.50 each; dozen lots, $2.00 each. Breeders (limited number), $15.00 each.

Send for circular. Order early. Orders filled in rotation as received.

Sterling Nusbaum

Carroll County. TANEYTOWN, MARYLAND

QUEEN TALKS

BY M. J. DEYELL, Apiarist.

JULY A GOOD MONTH IN WHICH TO REQUEEN

(Talk No. 9.)

Successful beekeepers are agreed in their opinion that July is one of the best months in which to requeen colonies of bees. In most latitudes there is a honey flow on and it is a known fact that queens are more easily introduced during a honey flow than during a dearth of nectar.

Then, too, young, prolific queens, when introduced during July, have ample time before late fall to produce populous colonies of young, vigorous bees to go into winter quarters; and, by the way, this is an essential requirement for the successful wintering of bees.

Beekeepers must plan ahead in order to have strong colonies for the season of 1927. Good queens are very essential, if not the most essential factor in beekeeping. Don't fail to requeen with the best queens obtainable.

ROOT QUALITY ITALIAN QUEENS

Quantity:	1 to 9.	10 to 24.	25 to 49.	50 to 99.	100 or over.
Untested	$1.20 each.	$1.00 each.	$0.90 each.	$0.80 each.	$0.75 each.
Select Untested	1.50 each.	1.40 each.	1.20 each.	1.10 each.	1.00 each.

Note: Our Untested and Select Untested laying queens prove to be approximately 99 per cent purely mated.

	1 to 9 pkgs.	10 to 24 pkgs.	25 or more pkgs.
2-pound package of bees	$5.00 each.	$4.50 each.	$4.00 each.

The A. I. Root Company, Medina, Ohio

Selected Queens

OF THE HIGHEST QUALITY

Queens by return mail.
Three-banded queens our specialty.

Our queens produce bees that are wonderful honey-gatherers, gentle and most resistant to all diseases. We guarantee every queen we ship to give entire satisfaction. We clip wings free of charge on request. Safe arrival and prompt delivery fully guaranteed. There may be other queens just as good, but we believe you will find few better. To know them, try them.

PRICES.

Select untested	**$0.75 each**
50 or more	**65c each**
Select Tested	**1.50 each**

Hayneville Apiary Co.
W. E. Harrell, Prop.
HAYNEVILLE, ALABAMA

Packages on Combs

We are through with the rush orders, so we can start in new now. Notice we are advertising in Gleanings since 1915. We ship on comb only as we have proofs that the natural feed is better for bees in transit. Each package is furnished with a government health certificate. Our bees are inspected twice a year by government inspectors. We have the light three-banded bees and queens. We ship on date promised or refund your money. We do all work our selves, no errors to be made.

Two-frame nuclei with 2 lbs. bees and a selected untested queen, 1 to 10, $4.00 each; 10 to 25, $3.75 each. Each additional frame add 60c, and additional pound of bees add 60c. If 25 pkgs. are wanted, wire at our expense to reserve you an open space, and mail check. Bees will be shipped as soon as remittance is received. We have the standard Hoffman frames only. After June 15 I offer select untested queens for 90c each; 25 or more, 80c each. A 5-lb. package with a select tested queen and two frames brood, $6.50 each. Refference, my bank, Avoyalles Bank, Moreauville, La. Order with remittance.

The Liberty Apiary
C. A. Mayeux, Prop. **HAMBURG, LA.**

A Customer Asks **About Thriftiness**

"The queens received from you last summer were in the cages 10 days before I got them in my colonies. Now the queer part of it is that these queens of yours after being mailed are superior to many of my queens that I rear right here in my own apiaries. And, furthermore, my queens are reared in a way just as the bees do it. The virgins or mated queens were never caged. While my queens were as big as yours and were hatched out and still had royal jelly in the bottoms and side walls of the cells, still they are not as good as your queens that were mailed, when it comes to heading strong colonies. Now the question is,, why are your queens so much superior?" Washington. (Name on request.)

Answer—**THRIFTINESS**. A third of a century of careful breeding makes our bees **THRIFTY**.

Re-queen from our **THRIFTY** strain this summer and note the difference next spring.

Untested queens, 1 to 9, 80c ea.; 10 up, 75c ea.; 100 up, 60c ea.

REMEMBER: THRIFTY queens are guaranteed to please and to reach you in good condition.

W. J. Forehand & Sons, Fort Deposit, Ala.

Citronelle Italian Queens

We are prepared to make prompt deliveries of Citronelle Queens. They will give you good service. Ask your neighbor beekeeper about them. Our output is more than 25,000 queens per season.

—SUMMER PRICES—

Untested, 1 to 12, 70c each; 12 to 50, 65c each; 50 to 1000, 60c each. Tested queens, 50c each more than untested queens. Breeders, $5.00 to $25.00 each.

—OUR CANADIAN AGENTS—

Andrews & Son, Winnipeg, Manitoba, Canada.
H. C. Derrick, 2912 12th Ave. W., Vancouver, B. C.

We guarantee every queen to satisfy or money will be refunded.

Citronelle Apiaries, Citronelle, Ala.

Superior Italian Queens

If you need queens promptly, let us supply you

Untested: 1, 80c; ten, 75c each; 100, 60c each. Tested, 50c each more.

Prompt shipment. Absolute satisfaction guaranteed.

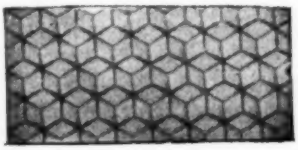
THREE THOUSAND NUCLEI

The Stover Apiaries

Tel. Office, Mayhew, Miss. Tibbee Station, Miss.

JUST A HINT

We Can Save You Big Money



MUTH'S QUALITY FOUNDATION

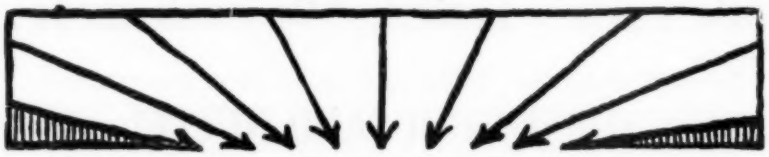
	5-lb. box lot.
Medium Brood	80c per lb.
Light Brood	82c per lb.
Thin Surplus	88c per lb.
Extra Thin Surplus	90c per lb.

Write for prices on larger quantities.

5 10-frame 1-story metal cover hives	$14.45
5 8-frame 1-story metal cover hives	12.90
5 10-frame 1 story Jumbo metal cover hives	15.70
5 10-frame 1-story Excelsior cover hives	11.95
5 8-frame 1-story Excelsior cover hives	10.95
5 10-frame No. 1 comb-honey supers	4.40
5 8-frame No. 1 comb-honey supers	4.05
5 10-frame shallow extracting supers	4.50
5 8-frame shallow extracting supers	4.20
5 10-frame bodies with frames	6.50
5 8-frame bodies with frames	5.80
100 Hoffman Frames	5.30
100 metal-spaced frames, Hoffman	7.25
100 shallow extracting frames, 5⅜-inch	4.00
100 shallow extracting frames, 4½-inch	4.00
1000 No. 1 4¼x4¼x1⅞ Sections	11.35
1000 No. 2 4¼x4¼x1⅞ Sections	10.60
No. 15 Reversible Cowan Honey Extractor	29.85
No. 17 Reversible Cowan Honey Extractor	32.85
No. 5 Novice Honey Extractor	25.75
Muth Ideal Bee Veil	.90

Space limits our attractive prices. Better write for our list of bargain prices. We guarantee you that you will save money on your purchases from us and that you will receive the highest of quality in our supplies.

Beeswax Rendered from old Combs

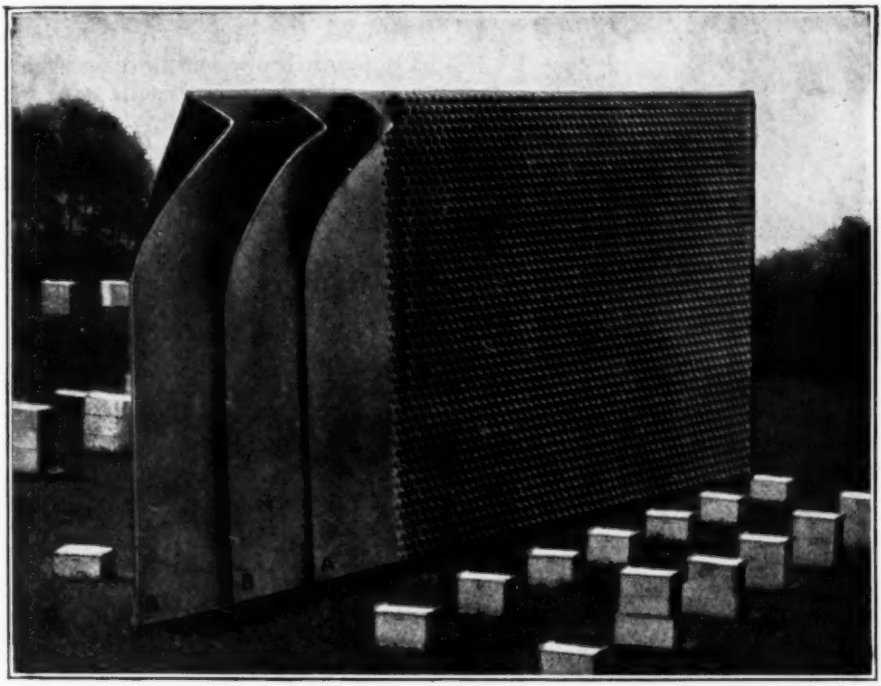


The Fred W. Muth Co.

Pearl and Walnut Sts. *Cincinnati, Ohio*

The Best Protection

FOR ANY APIARY, NORTH, EAST, SOUTH, AND WEST, AGAINST EXPENSIVE COMBS



Three-Ply Airco Foundation

NON-SAGGING
NON-STRETCHING
NON-WARPING

NON BREAKABLE IN EXTRACTOR
NO GNAWING AROUND WIRES
MAXIMUM NUMBER OF WORKER CELLS

"The Strength is in the Comb"

Root QUALITY BEE SUPPLIES

The A. Root Company
West Side Sta., Medina, Ohio

Root QUALITY BEE SUPPLIES

They can't help noticing it

Made in 3 sizes, 2½ lb. cans, 5 and 10 lb. pails. Brilliant and appropriate design in red, green and gold.

YOUR honey will prosper more with better packaging. Canco honey pails have been developed to help sell what you produce. Their brilliant decoration—on metal—gives great effect in display. They show up well in window and counter.

And you want people to notice your goods, so they'll be reminded to buy.

Use Canco honey containers—you'll be sure to draw eyes to your honey. For samples and full details, write to the nearest Canco office or to one of the distributors listed. Ample stocks on hand for prompt shipments.

Colorado Honey Producers Association, Denver, Col.

Dadant & Sons, Hamilton, Ill.

G. B. Lewis Company, Watertown, Wis.

10 Tivoli Street, Albany, N. Y.
1304 Main Street, Lynchburg, Va.
23 W. 3rd Street, Sioux City, Iowa
318 E. Broad Street, Texarkana, Ark.

B. F. Smith, Jr., Fromberg, Mont.

Standard Lumber Co., Winona, Minn.

American Can Company

NEW YORK CHICAGO SAN FRANCISCO PORTLAND, ORE. HAMILTON, ONT.

American Can

CONTAINERS OF TIN PLATE · BLACK IRON GALVANIZED IRON · FIBRE